# WAUKESHA WATER UTILITY WAUKESHA, WISCONSIN

Great Water Alliance Contract Package 6 Return Flow Pipeline, 18-Inch Sanitary Sewer, and Outfall Facilities

Addendum No. 2

April 23, 2020

Greeley and Hansen LLC

#### Dear Bidder:

Bidders for the above-named project are hereby notified that the following addenda are made to the Contract Documents. Conform bids to be received by 10:00 AM local time May 14, 2020 to this Addendum. Annotate Section 00 41 00 Bid Form, Article 3, Paragraph 3.01 to indicate receipt of this Addendum.

Download this Addendum from QuestCDN at <a href="www.questcdn.com">www.questcdn.com</a>. In your QuestCDN account, under 'Projects', enter the QuestCDN project number #6923865. Select the project to open the 'Bid Advertisement' page. At the top of the page, options are listed on the functions bar. Select 'Download Addenda' to enable the download of all addenda documents (PDF/Zip file format). Bid documents must be downloaded prior to downloading the addenda.

Date: 3/26/2020

MARTIN E-44302-6 CHICAGO

Expiration Date: 7/31/2020

## ADDENDUM NO. 2

# April 23, 2020

# **GENERAL**

The following general contractors were present at the April 14, 2020, mandatory Pre-bid Conference and are eligible to bid on the project:

- 1. Advance Construction, Inc.
- 2. DF Tomasini Contractors, Inc.
- 3. Dorner, Inc.
- 4. Garney Companies, Inc.
- 5. Globe Contractors, Inc.
- 6. Joel Kennedy Constructing Corp

- 7. Michels Corporation
- 8. PTS Contractors, Inc.
- 9. S.J. Louis Construction, Inc.
- 10. Super Excavators, Inc.
- 11. Walsh/Benchmark JV

The following other entities were also present at the Pre-bid Conference:

- 1. American Pipe
- 2. Bore Master, Inc.
- 3. Core & Main
- 4. Ferguson Enterprises
- 5. Gabe's Directional Drilling, Inc.
- 6. McWane Ductile
- 7. Mid City Corporation
- 8. MJM Trucking LLC

- 9. Next Electric LLC
- 10. P.J. Kortens and Company
- 11. Security Officer Services
- 12. Thompson Pipe Group
- 13. Tyler Union
- 14. United Rentals
- 15. U.S. Pipe

Attachment No. 1 includes a memorandum, which summarizes the verbal comments from the April 14, 2020, Pre-bid Conference.

The Plan Holders List as of April 17, 2020 is as follows:

- 1. American Cast Iron Pipe Company
- 2. Walsh Construction Company II, LLC
- 3. Crane Engineering Sales, Inc
- 4. NEXT Electric, LLC
- 5. Garney Companies, Inc.
- 6. Mid City Corporation
- 7. Mastec na twin cities
- 8. PJKortens and Co
- 9. Gabe's Directional Drilling
- 10. Etna Supply
- 11. Hobas Pipe USA
- 12. E J M Pipe Services
- 13. Benchmark Construction
- 14. MJ Construction, Inc.
- 15. Hogen Electric, Inc.

- 16. UPI Construction LLC
- 17. Thompson Pipe Group -Pressure
- 18. Push, Inc.
- 19. Northern Dewatering Inc.
- 20. Dodge Data & Analytics Next Member Number
- 21. United Piping
- 22. PTS Contractors, Inc
- 23. Super Excavators, Inc.
- 24. Concrete Industries
- 25. Ferguson Waterworks Pewaukee
- 26. Dorner Inc.
- 27. Joel Kennedy Constructing Corp
- 28. Payne & Dolan, Inc.
- 29. Black & Veatch Milwaukee, WI
- 30. RJ Underground Inc

- 31. August Winter & Sons, Inc
- 32. United Rentals Trench Safety Wisconsin
- 33. IOWA TRENCHLESS
- 34. Horizontal Boring & Tunneling Co.
- 35. DF Tomasini Contractors, Inc.
- 36. Globe Contractors, Inc.
- 37. CORE AND MAIN

- 38. Advance Construction Inc.
- 39. The Driller, LLC
- 40. Peterson and Matz, Inc.
- 41. Construct Connect
- 42. Pieper Power Milwaukee
- 43. ISCO2
- 44. Michels Corporation
- 45. US Pipe
- 46. S.J. Louis Construction, Inc.

All bidders are hereby notified of the following revisions:

### **SPECIFICATIONS**

1. Volume I of II, Division 0, Section 00 41 00 Bid Form, Article 6 Basis of Bid, Bid Alternate No. 1, Page 00 41 00-28:

#### Delete:

	CONTRACT ITEM	UNIT	ESTIMATED QUANTITY
8	Blow-Off Assemblies (Contract Item No. 8 for CP5 and CP6)	EA	22

## and replace with:

			ESTIMATED
	CONTRACT ITEM	UNIT	QUANTITY
	Blow-Off Assemblies		
8	(Contract Item No. 8 for CP5 and CP6)	EA	21

The updated bid worksheet can be accessed from your QuestCDN account as follows: Select the QuestCDN project number #6923865; at the top of the page in your account, options are listed on the functions bar; Select 'Online Bidding' and enter your login information for the QuestCDN VirtuBid page; Select the 'Bid Worksheet' to access the new worksheet. The worksheet can be downloaded using the 'Export to CSV' option or filled out without downloading the file.

2. Volume II of II, Division 33, Section 33 05 23 Jacking, Augering and Mining, Paragraph 3.1.J Grout Annular Space, Page 33 05 55-8:

Add the following sentence under Subparagraph J.3:

"Where venting is required or recommended by the manufacturer, vent and fill pipes on brick ends as an acceptable alternative to end seals. Cutting holes in steel casings will not be permitted."

3. Volume II of II, Division 33, Section 33 05 52 Buried Fiberglass Reinforced Plastic Pipe and Fittings, Paragraph 2.3 Manufacture, Page 33 05 52-3:

Under Subparagraph B, second sentence, delete "92" and replace with "90".

Under Subparagraph C, delete the second sentence and replace with the following: "Furnish interior surface of the pipe exposed to sewer flow with a nominal liner thickness of 40 mils."

4. Volume II of II, Division 33, Section 33 05 55 Buried Ductile Iron Pipe and Fittings, Paragraph 2.1 Manufacturers, Page 33 05 55-4:

Under Subparagraph A.3. Ductile iron mechanical joint fittings, add:

- c. Tyler Union
- 5. Volume II of II, Division 40, Section 40 05 20 Valves:

Under Paragraph 2.1.A.4 Air Valves, Page 40 05 20-4 add:

f. International Valve

Under Paragraph 2.7.B.1.b Valve Bodies, Page 40 05 20-8 add "Type 304 Stainless Steel".

### APPENDIX

6. Book I of II, Appendix I:

Update name of boring 6011 to RF-B-39A, boring 6012 to RF-B-041A, boring 6013 to RF-B-53, boring 6014 to RF-B-54, boring 6015 to RF-B-55, and boring 6016 to RF-B-56.

Add the attached boring logs after CC-B-069, Page 142:

RF-B-039A (3 pages)	CC-B-005A (2 pages)
RF-B-041A (2 pages)	CC-B-016A (2 pages)
RF-B-49	CC-B-017A (2 pages)
RF-B-50	CC-B-021A (3 pages)
RF-B-51	CC-B-050A (2 pages)
RF-B-52	CC-B-050B (2 pages)
RF-B-53	CC-B-056A (2 pages)
RF-B-54	CC-B-057B (2 pages)
RF-B-55	CC-B-064A
RF-B-56	

## **DRAWINGS**

7. Delete Note 1 on Drawing C122 and replace it with, "If pavement is disturbed between STA 3136+00 and 3138+50, complete pavement restoration to the median. This restoration, including

excavation, pavement, base course, and other appurtenant work, is incidental to existing contract items as specified in Section 01 29 00 Measurement and Payment."

8. Delete "Steel Casing Pipe Inside Diameter" on Drawing C302 in the Steel Casing Pipe Schedule and replace with "Steel Casing Pipe Nominal Diameter".

- END OF ADDENDUM -

PROJECT No		Gı	eat V		Allianc 052174	ALLIANCE"	BORIN	IG L	OG	Inte	rtek	<del>p</del>		PAGE		I Dri	No RF-B-039
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OG QC BY					D. Harri	HAMMER TYPE EFF	3½ HSA	STATION		OF	FSET	0th St	reet	EASTIN	NG		324
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Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock D and Geologica Each Major Unit	al Origin for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconined Comp. Strengtn Q (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
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21 SS	18	6 8	14		645				į	51 (645)	CL			1.25	1.57			33		
		ٹ			B	oring offset 40' No	orth due t	o helov	/-arade util	ities				•						

Boring offset 40' North due to below-grade utilities and access

End of Boring at  $51.0 \ \text{ft.}$ 

WATER & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: 4ft.

WATER LEVEL AT COMPLETION: 28ft.

CAVE DEPTH AFTER 0 HOURS: N/A

WATER LEVEL AFTER 0 HOURS: N/A

NE = Not Encountered; NMR = No Measurement Recorded

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

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				] -		Gray Silty Fine Sand, I	Moist to Very Mo		9 (711)										
5	14	3 9	22	<u>10</u>	710														
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										SM									
		3		-															
6 SS	16	8 7	15	-													12		
		•							14 (706)										
						Gray Lean Clay, Trace Sand and Silt Lenses,	Sand and Grav Moist to Verv M	el, With	Fine										
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		12						2	24 (696)										
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COUNTY						TOWNSHIP RANGE	SECTION	I	1/4 SECTIO	ON	1/4 S	SECTION		SURF	ACE ELI	OITAVE	N		720 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock and Geologic Each Major Ur	cal Origin for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q <sub>,</sub> (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Notes	
11 SS	18	3 6 8	14	_	_	Gray Silt With Interbedded Moist		is, Very 6.5 (693.5)	ML							15			
12 SS	18	3 7 10	17	- -	- -	Gray Lean Clay, Trace San Very Moist						4.5	4.33			15			
13 SS	18	2 4 6	10	30	<b>690</b> _							2.75	2.97			17			
14 SS	18	5 8 11	19	- -	-				CL			4.5+	5.15			18			
15 SS	18	4 6 8	14	<u>35</u>	685 _							3.5	3.22			16			
16 SS	18	2 5 7	12	- -	_ 	$\nabla$		39 (681)				3.75	3.71			17			
17 SS	18	4 6 10	16	<u>40</u>	680	Gray Medium Sand, Wet			SP							24			
				1 1	_	Gray Lean Clay, With Fine		1.5 (678.5)		////									
18 SS	18	4 7 8	15	-	-	Very Moist		· · · · · · · · · · · · · · · · · · ·								17			
19 SS	18	5 8 9	17	<u>45</u>	_ 675	End of Borir	ng at 46 0 ft	46 (674)	CL			2.75	2.97			20			

اد			
5		ER & CAVE-IN OBSE	RVATION DATA
ш	7 WATER ENCOUNTERED BURING BRILLING. 200	e leal	CAVE DEDTIL AT C

			4	16 (674)	<i>\///</i> \	-		-		
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GE	WATER LEVEL AT COMPLETION: 25ft.		Ē	CAVE DEPT	H AFTER 0 H	IOURS:	N/A			WET
Š	▼ WATER LEVEL AFTER 0 HOURS: N/A			NE = Not Enc	ountered; NMR	R = No Mea	asurement	Recorded		
- 00	NOTE: Stratification lines between soil types represent the a	pproximate boundary; gradua	al trans	sition between ir	n-situ soil layer:	s should b	e expected	i.		

					Allian	GREAT WATER	RODI	NG L	<u> </u>	Into	rtok	[P	eil			NG	No	RF	-B-49
PROJECT №				0	05217		BORI	NG L	JG	inte	rtek	l <sub>E</sub>		PAGE					1 of 1
CONSULTANT			Gr	eeley	-Hans	CONSULTANT PROJECT №		DATE STAF	RTED			4/	30/19	HORI	ZONTAL	DATUM <b>NA</b>	D 27	ERTICAL DATU	GVD 29
DRILLING CON	TRACT	OR			GESTI	DRILLING CONTRACTOR PROJE	CT No	DATE COM	PLETED			4/	30/19	LATIT	UDE		•		
CREW CHIEF				В.	Sarge	ent DRILLING RIG	edrich D50 AT	V BORING O	FFSET					LONG	SITUDE				
FIELD LOG BY					K. Turr	DRILLING METHOD / HOLE SIZE	31/4 HS	ROADWAY	NAME	Reaei	ration	Stru	cture	NORT	HING				319177
LOG QC BY					Broba	HAMMER TYPE EF	FICIENCY 85°	STATION			FFSET			EAST	ING				2539637
COUNTY						TOWNSHIP RANGE	SECTION	ı '	1/4 SECTION	ON	1/4 S	ECTION		SURF	ACE ELI	EVATION	١		690 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock and Geologic Each Major Un	cal Origin for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength $Q_p$ (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Notes	
1		1	_			Topsoil (5"± Thick)		0.4 (689.6)/	OL	311/1									
SS	24	3	5		_	Brown Lean Clay, With Sar Mottling, Very Moist						1.75	1.73			19			
2 SS	13	3 5 9	14	-	-			4 (222)	CL			4.25	4.12			16			
				-	-	Brown Lean Clay, With Sar	nd and Gravel, W	4 (686) /ith Silt											
3 SS	18	5 7 10	17	5	<b>685</b> -	Lenses, Moist	ŕ					2.75	2.89			17			
4 SS	18	5 10 14	24	-	-			9 (681)	CL			4.5+	4.95			17			
				+	-	Gray Lean Clay, Trace San	d and Gravel, W												
5 SS	18	4 7 11	18	<u>10</u>	680 _	Lenses and Seams, Moist	to Wet					4.5+	6.18			16			
					_	$ar{oldsymbol{\Lambda}}$													
6 SS	18	4 6 13	19	_	_	<u> </u>			CL			3.75	3.87			21			
					-	)													
7 SS	16	4 6 9	15	15	675 _	<u>ra</u>										15			
					}	Gray Clayey Sand, Wet	10	6.5 (673.5)											
8 SS	15	4 5 10	15		-				sc							21			
					-	Gray Lean Clay, With Silt S	Seame Veny Mei	19 (671)											
9 SS	17	5 7		20	670		eams, very Mon	21 (669)	CL			3.0	2.89			17			

WATER & CAVE-IN C	BSI	ERVATION DATA

		2	21 (669)	
6	End of Boring at 21.0 ft.			
2/19				
7/1				
Jce				
Alliance				
ater /				
Wa				
reat Wa				
Ō				
CH	WATER & CAVE-IN	OBSE	ERVATION DATA	
OTE	WATER ENCOUNTERED DURING DRILLING: 13.5ft.	R	CAVE DEPTH AT COMPLETION: 15ft.	WET DRY
GE	▼ WATER LEVEL AT COMPLETION: 12ft.	Ī	CAVE DEPTH AFTER 0 HOURS: N/A	WET   DRY
S S	▼ WATER LEVEL AFTER 0 HOURS: N/A		NE = Not Encountered; NMR = No Measurement Recorded	
- 00	NOTE: Stratification lines between soil types represent the approximate boundary; gradu	ual tran	sition between in-situ soil layers should be expected.	
	•			

Blow Counts	N - Value	eeley B.	0052174 y-Hanse GESTR . Sarger K. Turne Brobac	CONSULTANT PROJECT No  A  DRILLING CONTRACTOR PROJ  A  DRILLING RIG  DRILLING METHOD / HOLE SIZ  HAMMER TYPE	iedrich D50		DATE START DATE COMP BORING OFF ROADWAY N STATION	TED  LETED  SET	Reaer		4/3	30/19 30/19	PAGE N HORIZO LATITUI LONGIT NORTH	DNTAL I	DATUM <b>N.A</b>	1 of 1 ND 27 VERTICAL DATUM NGVD 29 319140
		B.	GESTR . Sarger K. Turne Brobac	DRILLING CONTRACTOR PROJUMN A DRILLING RIG DRILLING METHOD / HOLE SIZE OF THE PROJUMN AND THE	iedrich D50 E 31/2	4 HSA 85%	DATE COMP BORING OF ROADWAY N	LETED FSET			4/3	30/19	LONGIT	DE FUDE ING	NA NA	AD 27   NGVD 29
	N - Value	B.	Sarger K. Turne Brobac	A DRILLING RIG D DRILLING METHOD / HOLE SIZE  BY HAMMER TYPE Auto	iedrich D50 E 31/2	4 HSA 85%	BORING OFF	FSET					LONGIT	TUDE ING		
Blow Counts	N - Value	В.	K. Turne Brobac	nt D PRILLING METHOD / HOLE SIZE PT	31/2	4 HSA 85%	ROADWAY N	<b>I</b> AME			Stru	cture	NORTH	ING		319140
Blow Counts	N - Value	В.	Brobac	er HAMMER TYPE Auto	31/2 EFFICIENCY	85%	STATION				Stru	cture			_	319140
Blow Counts	N - Value			k Auto				1/4 SECTIO	OF	FSET			LASTIN	K-i		
Blow Counts	N - Value	Jepth (ft)	n (ft)	TOWNSHIP RANGE	SE	ECTION				14/4.01	OTION		SURFAC		7./ATIO	2539639
Blow Counts	N - Value	Jepth (ft)	n (ft)						JN I	1/4 St	CTION		SURFAC	CE ELE	VATIO	688 ft
			Elevation (ft)	Soil / Rock and Geolog Each Major U	c Description ical Origin f Init / Comme	or		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength $Q_{\rho}$ (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
1				Topsoil (7"± Thick)		0.6	(687 4) ~	OL	7/1/						23	
4	'	+	-  `	Brown Sandy Lean Clay, \	/ery Moist	0.0	(00)	CL			2.5				23	
			_	Prouga Loop Clay With So	and and Cilt I											
5	13		685	Gravel, Moist	and and Sill L	Lenses,	Trace					3 30			15	
8												5.50			10	
		+														
7	22	5	_													
11	23							CL			4.5+	5.77			15	
			_													
		+	-													
			680								4.0	3.30				Shelby Tube was damaged
							9 (679)									
1				Gray Lean Clay, Trace Sa	ind and Grav	el, Moist	t to									
4 8	18	10	_	voly molec							0.0	2 00			40	
10			_								2.0	2.89			19	
4	1.0	1 1														
7	12	+	675								3.0	2.64			19	
			_													
3		15														
6 7	13			1				CL			2.75	2.80			21	
<u> </u>		+	_													
			_													
10	22		670								2.0	1 01			10	
12	-										2.0	1.01			10	
		+	-													
7	10	20	_													
10	19					2	21 (667)					3.96			20	
	3 4 4 5 8 7 11 12 4 8 10 4 5 7 8 10 12	3 4 7 4 5 13 8 13 7 11 23 12 23 4 8 18 10 18 7 12 7 12 7 9 19	3	3 7 4 7 4 5 8 13 685 8 7 5 11 23 12 680 680 680 680 680 680 680 680 680 680	3 7 4 8 Brown Sandy Lean Clay, With Sa Gravel, Moist   680  680  680  Gray Lean Clay, With Sa Gravel, Moist  Gray Lean Clay, Trace Sa Very Moist  4 12 675  7 12 675  7 13 22 670  7 9 19 10	Brown Sandy Lean Clay, Very Moist  Brown Sandy Lean Clay, With Sand and Silt I Gravel, Moist  Brown Lean Clay, With Sand and Silt I Gravel, Moist  Gray Lean Clay, Trace Sand and Grav Very Moist  Gray Lean Clay, Trace Sand and Grav Very Moist  4 12 675 7 12 675 7 12 670  4 12 677 7 19 19	10   10   10   10   10   10   10   10	3 7	13	10   10   10   10   10   10   10   10	Topsoil (7"± Thick) 0.6 (687.4) OL 2.5.  Brown Sandy Lean Clay, Very Moist 2 (686)  Brown Lean Clay, With Sand and Silt Lenses, Trace Gravel, Moist  CL  680  680  680  680  680  680  680  671  680  680  672  680  680  680  680  680  680  680  68	Topsoil (7'± Thick) 0.6 (687.4) OL 3.5' CL 2.5 Brown Sandy Lean Clay, Very Moist 2 (686) Brown Lean Clay, With Sand and Silt Lenses, Trace Gravel, Moist CL 4.5+  680	Topsoil (7"± Thick) 0.6 (687.4) CL 2.5   Brown Sandy Lean Clay, Very Moist 2 (686)   Topsoil (7"± Thick) 0.6 (687.4)   CL 2.5   Shown Lean Clay, With Sand and Silt Lenses, Trace Gravel, Moist   Topsoil (7"± Thick) 0.6 (687.4)   CL 2.5   Topsoil (7"± Thick) 0.6 (687.4)   Topsoil (7"± Thick) 0.6 (687.4)   CL 2.5   Topsoil (7"± Thick) 0.6 (687.4)   Topsoil (8"± Thic	Topsoil (7*± Thick) 0.6 (687.4) OL 3.5 (CL 2.5 (2686) Brown Sandy Lean Clay, Very Moist 2 (686) Brown Lean Clay, With Sand and Silt Lenses, Trace Gravel, Moist CL 4.5+ 5.77 (CL 4.5+ 5.77) (CL 4.5+ 5.77	Topsoil (7"± Thick) Brown Sandy Lean Clay, Very Moist 2 (686)  Brown Lean Clay, With Sand and Silt Lenses, Trace Gravel, Moist  CL  4.5+ 5.77  680  Gray Lean Clay, Trace Sand and Gravel, Moist to  Gray Lean Clay, Trace Sand and Gravel, Moist to  Gray Lean Clay, Trace Sand and Gravel, Moist to  CL  4.5+ 5.77  4.0 3.30  2.5  4.0 3.30  3.30  4.15  7. 12  675  7. 12  675  7. 13  15  677  7. 12  670  20  10  20  20  21  21  22  670  20  20  20  21  21  20  20  20  20  2	Topsoil (7*± Thick) 0.6 (687.4) O. 3.5

\\/\TED 0	
WAIFRA	CAVE-IN OBSERVATION DATA

		2	21 (667)	
•	End of Boring at 21.0 fl	t.		
2/19				
7				
JCe				
Alliance				
ater /				
Wat				
reat W				
ō				
S	WATER & CAVE-IN	I OBSE	ERVATION DATA	
9		Ĭ <u>S</u>	CAVE DEPTH AT COMPLETION: 15.5ft.	WET DRY
GE	▼ WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: N/A	WET  DRY
8	▼ WATER LEVEL AFTER 0 HOURS: N/A		NE = Not Encountered; NMR = No Measurement Recorded	
- 00	NOTE: Stratification lines between soil types represent the approximate boundary; grad	dual trans	sition between in-situ soil layers should be expected.	
_				

PROJECT NA		Gı	reat V	Vater	Allian	CE GREAT WATER	BORIN	IG I (	)G	Inte	rtek		sil	B(		NG	No RF	-B-51
PROJECT No			Gr		05217 /-Hans	CONSULTANT PROJECT No	DOM	DATE STAR					30/19			DATUM NA	.D 27	1 of 1 GVD 29
DRILLING CC	ONTRACT	OR	<u> </u>		GESTF	DRILLING CONTRACTOR PROJE	CT No	DATE COM	PLETED				30/19	LATIT	UDE	11/7	10 21	OVD 23
CREW CHIEF					. Sarge	DRILLING RIG	edrich D50 ATV	BORING OF	FSET				50/10	LONG	ITUDE			
FIELD LOG B	BY				K. Turn	DRILLING METHOD / HOLE SIZE	31/4 HSA	ROADWAY	NAME	Reaei	ration	Stru	cture	NORT	HING			319141
LOG QC BY					Broba	HAMMER TYPE EF	FICIENCY 85%	STATION			FFSET			EASTI	ING		2	2539659
COUNTY						TOWNSHIP RANGE	SECTION		1/4 SECTIO	NC	1/4 S	ECTION		SURF	ACE ELI	EVATION	I	687 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock and Geologic Each Major Ur	cal Origin for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes	
1	17	1 2	6			Topsoil (6"± Thick)	0.51	(686.49)/	OL	31/1								
SS	.,	4		†	-	Brown Sandy Lean Clay, V	ery Moist		CL			1.75	1.73			24		
		3		_	685_	Brown Lean Clay, With Gra	av Mottlina. With S	2 (685) Sand.										
2 SS	18	3 4 7	11		_	Trace Gravel, Moist	<b>J</b>	,	CL			3.5	3.3			17		
		'						4 (683)										
					-	Brown Lean Clay, Trace Sa	and and Gravel, W	_ ,										
3 SS	16	4 8	18	5	-	Lenses, Damp												
SS		10			_							4.5+	8.45			19		
					680													
4		5			_ "				CL									
SS	3	10 15	25	-	-							2.5				22		
					_													
		3		10				10 (677)										
5 SS	18	7	17	:	-	Gray Lean Clay, Trace to V With Fine Sand Lenses, Ve	Vith Sand and Gra					4.5+	4.95			18		
		10		_	-	With Fine Sand Lenses, ve	ery ivioist											
					675													
6 SS	18	3 5 8	13															
SS		8			-							3.5	3.54			21		
					-													
7		4		15	_	<u> </u>												
SS	16	4 6	10						CL			4.5				22		
					-													
		7		+	670													
8 SS	18	7 7 8	15		_							2.25	2.5			21		
		O																
					-													
9	15	7 9 7	16	20	-							0.05	0.00			00		
SS		7				End of Borir		21 (666)				2.25	2.97			20		

\\/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	CAVE-IN OBSERVATION DATA

	33	7						2	21 (666)			2.23	2.97		20	 	
6							End of Boring at 21.0 ft	:-									
12/19																	
1/2																	
nce																	
Alliance																	
ater																	
Š																	
Great Wa																	
-						1/	VATER & CAVE-IN	ODCI	-D\/ATI							 	
┆						V	VATER & CAVE-IIN		ERVAIR	JN DATA	١						
OTE		VATER ENCC	UNTE	ERED [	DURIN	G DRILLING:	NE		CAVE D	EPTH AT C	COMPLE	TION:	15ft.				WET   DRY
GE	Δ N	VATER LEVE	L AT C	COMPL	ETION	I: NE		Ē	CAVE D	EPTH AFT	ER 0 HC	URS:	N/A				WET   DRY
GW	▼ N	VATER LEVE	L AFTE	ER 0 H	IOURS	: N/A			NE = Not	Encountere	d; NMR =	= No M	easureme	nt Record	bet		
- 00	NOTE: S	Stratification line	es betw	veen so	il types	represent the a	pproximate boundary; grad	dual tran	sition betwe	een in-situ so	il layers	should	be expect	ed.			

PROJECT NAME	E	Gr	eat V	Vater	Alliar	псе	GREAT V	VATER	B	ORIN	GL	OG	Inte	ertek		Si	B	ORI	NG	No RF-B-52
CONSULTANT				(	005217	741	CONSULTANT PROJEC				DATE STAF								DATUM	1 of 1
DRILLING CONT	TRACTO	DR.	Gı	eeley	y-Hans	sen	DRILLING CONTRACTO		0		DATE COM				4/	30/19		TUDE	N/	AD 27 NGVD 29
CREW CHIEF					GEST		DRILLING RIG				BORING OI				4/	30/19		GITUDE		
FIELD LOG BY					. Sarg		DRILLING METHOD / H		ich [	050 ATV	ROADWAY							THING		
LOG QC BY					K. Tur		HAMMER TYPE	EFFICII		31/4 HSA	STATION			ration	Stru	cture	EAST	ΓING		318836
COUNTY				В.	Broba	ack	TOWNSHIP	RANGE		85% SECTION		1/4 SECTION	DN NC	1/4 S	ECTION		SURF	ACE EL	EVATIO	<b>2539659</b>
															£	£				676 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		and G	/ Rock De: Seological ajor Unit /	Oriģi	n for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
1 SS	15	1 2 4	6	_	675		opsoil (26"± Thick	)		2.0	(072.0)	OL	1/ 21 /2 21 /2						28 45	
2 SS	14	2 4 5	9	_	-	Br	rown Sandy Lean	Clay, With	Gray		(673.8) Moist 4 (672)	CL			2.5	2.31			20	
3 SS	11	2 1 3	4		_ _ 670	$ abla^{M}$	rown Lean Clay, T ottling, Very Moist	race Sand to Moist	and (	Gravel, Wi						2.06			26	
4 SS	16	4 8 13	21	_ _ _	<del>-</del>						9 (667)	CL			4.5+				17	
5 SS	18	4 9 12	21	1 <u>0</u>	_ _ 665	G	rayish Brown to G ravel, With Sand S	ray Lean C Seams, Mo	lay, T	race Sand Very Mois	l and				4.5+	4.33			15	
6 SS	16	3 5 6	11	- -	- -										1.75	1.40			24	
7 SS	12	3 4 7	11	<u>15</u>	_ 660	園						CL			3.0	3.30			20	
8 SS	10	4 5 7	12	- -	_ _ _										2.5	1.98			21	
9 SS	11	4 6 8	14	20	- 655		End	of Boring a	t 21.0		21 (655)				2.0	2.31			18	

	)RSFRVATI	

	"	´	8			655			2	21 (655)		<b>%</b>	2.0	2.51		'	٠		
_								End of Boring at 21.0 ft.		, ,	1///							 	
2/19								· ·											
7/1;																			
Se																			
Alliance																			
/ater																			
reat Wa																			
Gre																			
CH							V	WATER & CAVE-IN	OBSE	ERVATIO	N DATA								
OTE	$\nabla$	WAT	ER ENC	OUNT	ERED	DURING D	RILLING:	5ft.	園	CAVE DE	EPTH AT C	OMPLE	TION:	: 15.5	5ft.				WET DRY
GE	Ā	WAT	ER LEVE	EL AT (	COMPL	LETION:	3.5ft.			CAVE DE	EPTH AFTE	ER 0 HC	DURS:	N/A					WET
Š	Ţ	WAT	ER LEVE	L AFT	ER 0 H	HOURS:	N/A			NE = Not	Encountered	d; NMR :	= No M	leasuren	nent R	ecorded			
- 00	NOTE	: Strati	ification lin	nes bet	ween so	oil types rep	resent the a	pproximate boundary; gradu	ıal tran	sition betwe	en in-situ so	il layers	should	be expe	cted.				
-																			

PROJECT No		VA - A	ltern		BPS Site	ALLIANCE" DUKIN	G LC	)G	Inte	rtek	P	Si	PAGE		NG	
CONSULTANT	Г				0521741	CONSULTANT PROJECT No	DATE START	ED				20112	HORI	ZONTAL	DATUM	VERTICAL DATUM
RILLING CO	NTRACT	OR	Gı		-Hansen	DRILLING CONTRACTOR PROJECT No	DATE COMP	LETED				30/19	LATIT	TUDE	ΝA	D 27 NGVD
CREW CHIEF					GESTRA	DRILLING RIG	BORING OFF	SET			4/:	30/19	LONG	SITUDE		
FIELD LOG B	Y				Sargent	DRILLING METHOD / HOLE SIZE	ROADWAY N	IAME	Dagar		Cturr	- <b>4</b>	NORT	ΓHING		2404
OG QC BY					K. Turner Broback	HAMMER TYPE EFFICIENCY	STATION		Reaer	FSET	Stru	cture	EAST	ING		319 <sup>2</sup> 25390
COUNTY				В.	DIODACK	TOWNSHIP RANGE SECTION	1	I/4 SECTION	ON	1/4 S	ECTION		SURF	ACE EL	EVATION	
											tt.	)th				
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength $Q_{\rm p}$ (tsf)	Unconfined Comp. Strength Q <sub>,</sub> (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
1	24	1	_		T	Topsoil (5"± Thick)	(689.6)/	OL	317							
SS	24	2 3	5	+		Brown Lean Clay, With Sand and Gravel, Trac					1.75	1.73			19	
				]	-   "	Mottling, Very Moist		CL								
2 SS	13	3 5	14		_			, OL			4 25	4.12			16	
		9					4 (686)				0	2			.	
				†	1 1	Brown Lean Clay, With Sand and Gravel, With Lenses, Moist										
3 SS	18	5 7	17	5	685	LOTIOGO, IVIOISE					2 75	2 00			17	
JJ		10			-						2.75	2.89			17	
					_			CL								
4	18	5 10	24													
SS	10	14	24	†	-						4.5+	4.95			17	
					-	Gray Lean Clay, Trace Sand and Gravel, With Lenses and Seams, Moist to Wet	9 (681) Silt									
5	40	4	10	10	680	Lenses and Seams, Moist to Wet										
ŠŠ	18	7 11	18		_						4.5+	6.18			16	
					TT											
6		4		† †	- <u>Ā</u>											
SS	18	6 13	19		- <u>\</u>			CL			3.75	3.87			21	
				1	-											
		4		15	675 🛭											
7 SS	16	6	15		_ [										15	
				† †	-		(673.5)									
		1		+ +	-   [	Gray Clayey Sand, Wet										
8 SS	15	4 5 10	15		-			SC							21	
		10					9 (671)									
				20	670	Gray Lean Clay, With Silt Seams, Very Moist										
9 SS	17	5 7		20	_ "			CL			3.0	2.89			17	
-						End of Boring at 21.0 ft.	21 (669)		<i>\\\\\</i>							

CONSULTANT  DRILLING CONTRACT  CREW CHIEF		Iterna		BPS Sit	ALLIANCE" DUKIN	G LO	OG	Inte	rtek	P	Si	B(		NG	No RF-B-5
				052174	CONSULTANT PROJECT No	DATE STAR	TED			4/4	20/40	HORIZ	ZONTAL	. DATUN	1 of
CREW CHIEF	TOR	Gr		-Hanse	DRILLING CONTRACTOR PROJECT No	DATE COMP	PLETED				30/19	LATIT	UDE	N/	AD 27 NGVD
				GESTR	DRILLING RIG	BORING OF	FSET			4/3	30/19	LONG	SITUDE		
FIELD LOG BY				Sarger	DRILLING METHOD / HOLE SIZE	ROADWAY I	NAME			<u> </u>		NORT	HING		040
OG QC BY				. Turne	HAMMER TYPE EFFICIENCY	STATION		Reaer	FSET	Stru	cture	EAST	ING		319
COUNTY			В.	Brobac	ck     Auto     85%       TOWNSHIP     RANGE     SECTION		1/4 SECTION	ON	1/4 S	ECTION		SURF.	ACE ELI	EVATIO	2539 <sup>N</sup>
										£	£				68
Sample No / Type	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength $\ensuremath{Q_{\!\scriptscriptstyle D}}$ (tsf)	Unconfined Comp. Strength Q <sub>,</sub> (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
1 40	1				Topsoil (7"± Thick)	(687.4)	OL	Z1 1/2 Y						23	
SS 16	3 4	7		-  `	Brown Sandy Lean Clay, Very Moist	(551.7)	CL			2.5				23	
				-	Brown Lean Clay, With Sand and Silt Lenses,	2 (686)									
2 SS 18	4 5 8	13		685	Gravel, Moist	11ace					3.30			15	
3 SS 16	7 11 12	23	5	-			CL			4.5+	5.77			15	
4 12				- 600											
ST 12				680	Gray Lean Clay, Trace Sand and Gravel, Mois	9 (679) t to				4.0	3.30				Shelby Tube was damag
5 SS 18	4 8 10	18	10	-	Very Moist					2.0	2.89			19	
6 SS 8	4 5 7	12	+	- 675						3.0	2.64			19	
7 SS 18	3 6 7	13	15	- - - -	<u>a</u>		CL			2.75	2.80			21	
8 SS 18	8 10 12	22	+	- 670						2.0	1.81			18	
9 SS 13	7 9 10	19	20	-	End of Boring at 21.0 ft.	21 (667)					3.96			20	

PROJECT No	GW	/A - A	ltern	ative		ALLIANCE DURIN	G LC	OG	Inte	rtek	P	Si	PAGE		NG	
ONSULTANT					05217	CONSULTANT PROJECT No	DATE START	ΓED			419	20/40	HORI	ZONTAL	DATUM	VERTICAL DATUM
RILLING CON	NTRACT	OR	G	reeley		DRILLING CONTRACTOR PROJECT №	DATE COMP	LETED				30/19	LATIT	TUDE	NA	D 27 NGVD
REW CHIEF					GEST Sarge	DRILLING RIG	BORING OFF	FSET			4/,	30/19		SITUDE		
ELD LOG BY	,				Saryı (. Turı	DRILLING METHOD / HOLE SIZE	ROADWAY N	NAME	Reaer	ation	Stru	cture		THING		319 <sup>-</sup>
OG QC BY					Broba	HAMMER TYPE EFFICIENCY	STATION			FSET	Otila	oturo	EAST	ING		25390
OUNTY						TOWNSHIP RANGE SECTION		1/4 SECTI	ON	1/4 S	ECTION		SURF	ACE EL	EVATION	
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
1		1				Topsoil (6"± Thick)	686.49)/	OL	7/1/							
SS	17	2 4	6	1 +	-	Brown Sandy Lean Clay, Very Moist	000.49)/	CL			1.75	1.73			24	
				1	_ 685	Brown Lean Clay, With Gray Mottling, With Sa	2 (685)									
2 SS	18	3 4	11		_	Trace Gravel, Moist	iu,	CL			3.5	3.3			17	
		7					4 (683)				3.5	3.5				
					-	Brown Lean Clay, Trace Sand and Gravel, Wil Lenses, Damp										
3 SS	16	4 8	18	5	-						4 5+	8.45			19	
		10		+ +	-						1.0	0.40				
					680			CL								
4 SS	3	5 10	25		_						2.5				22	
		15									2.3					
				†	-		10.15==									
5 SS	18	3 7	17	10	-	Gray Lean Clay, Trace to With Sand and Gray	10 (677) ⁄el,				45.	4.05			10	
		10			-	With Fine Sand Lenses, Very Moist					4.5+	4.95			18	
					_ 675											
6 SS	18	3 5	13								2 F	3.54			21	
33		8			-						ა.၁	J.54			21	
				†	-											
7 SS	16	4 4	10	15	-	<b>\overline{\over</b>					4.5				22	
		6			-			CL			4.5				22	
					_ 670											
8 SS	18	7 7	15								2.25	2 5			21	
55		8			-						2.23	2.5			۷۱	
				†	-											
9 SS	15	7 9	16	20	-						2.25	2 07			20	
55		7				End of Boring at 21.0 ft.	21 (666)				2.23	2.91			20	

PROJECT No	Ğ₩	/A - A	ltern		BPS Site	ALLIANCE"	BORIN	IG LO	OG	Inte	rtek	P	Sil	BO		NG	No RF-B-
CONSULTANT				0	0521741			DATE STAR				-12				DATUM	1 of
RILLING CON	прлст	OR.	Gı	reeley	-Hanser	DRILLING CONTRACTOR PROJECT N	No	DATE STAR				4/:	30/19	LATIT		NA NA	D 27   VERTICAL DATOM NGVD
REW CHIEF	mwo10			(	GESTRA	DRILLING CONTRACTOR PROJECT I	••	BORING OF				4/:	30/19		SITUDE		
TELD LOG BY				В.	Sargent	Diedi DRILLING METHOD / HOLE SIZE	rich D50 ATV	ROADWAY							HING		
				r	K. Turnei	r	3¼ HSA		NAIVIE	Reaer		Stru	cture				3188
OG QC BY				В.	Broback	Auto	85%	STATION			FFSET			EAST			25396
COUNTY						TOWNSHIP RANGE	SECTION		1/4 SECTION	JN T	1/4 St	ECTION		SURF	ACE ELI	EVATION	670
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock De and Geological Each Major Unit /	Origin for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength $Q_{\rm p}$ (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
1 SS	15	1 2 4	6	_	675	Topsoil (26"± Thick)			OL	76						28 45	
2 SS	14	2 4 5	9	_	- <u>Ā</u>	Brown Sandy Lean Clay, With			CL	1,		2.5	2.31			20	
3 SS	11	2 1 3	4	_5	- _ 670	Brown Lean Clay, Trace Sand Mottling, Very Moist to Moist	l and Gravel, W	4 (672) ith Gray					2.06			26	
4 SS	16	4 8 13	21	<u>-</u>	-				CL			4.5+				17	
5 SS	18	4 9 12	21	10		Grayish Brown to Gray Lean C Gravel, With Sand Seams, Mo	Clay, Trace Sandist to Very Mois	9 (667) d and st				4.5+	4.33			15	
6 SS	16	3 5 6	11	_	- -							1.75	1.40			24	
7 SS	12	3 4 7	11	<u>15</u>	660  				CL			3.0	3.30			20	
8 SS	10	4 5 7	12	-	-							2.5	1.98			21	
9 SS	11	4 6 8	14	20	- - 655	End of Boring a		21 (655)				2.0	2.31			18	

PROJECT NAM		Gı	reat V		Alliar		& GF	REAT	WATE	R B	BORII	NG	LO	G	Inte	rtek		S	PAGE		ING N	o CC-B-00
CONSULTANT					05217		CONSULTAN	NT PROJE	ECT No				STARTED						HORI	ZONTAL	. DATUM	VERTICAL DATUM
RILLING CON		OR	Gr	reeley	/-Hans	en	DRILLING C			JECT No			COMPLET	FD			5/	13/19	LATIT		NAD 2	27 NGVI
REW CHIEF					l	PSI	DRILLING R						IG OFFSE				5/	13/19		SITUDE		
IELD LOG BY	/				P. Rota	aru	DRILLING M		HOLE SIZ		ATV #41	9	WAY NAM							THING		
OG QC BY				R.	Blade	orn	HAMMER TY			EFFICIENC'	31/4 HS/	STATIO		_	In	FFSET	Ryan	Road	EAST			324
OUNTY				B.	Broba	ick	TOWNSHIP		Auto		85%	ó		SECTIO			SECTION	1			EVATION	2534
T	-			1			TOWNORM		TOTAL	_	GEOTION		1,74	DEOTIO		1740	1		OOR	I	I	70
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		E	and	Geolog	k Descr gical Ori Jnit / Co	iption gin for omments			USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>o</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
						Fi	II, Gray Si	Ity Sar	nd and C	Gravel, N	Moist	.8 (701	2)	SM							_	
		4		-	_	Fi	II, Gray ar	nd Blad	ck Lean	Clay, Tr	race Sand		.2)								7	
1 SS	10	3	6	_	700	G	ravel, Moi:	st						CL			3.75	3.96			14	
		<u> </u>		-								3 (69	99)									
					_		ray Lean (	Clay, w	ith Gree	enish Br	own Mottli											
2 SS	13	3 3	7	-	_	171	0101							CL							20	
SS		4	_	_5	-						_	E /000									20	
						Br	rown Sand	dy Silty	Clay, V	/ery Mois		.5 (696	.၁)									
3	E	3			-									CI								
SS	5	2	4	-	695									CL							29	
				]	_	-	ray Loon (	<u> </u>	ith Cilt	Saama	\/on/Mai-	8 (69										
		1		1		G	ray Lean (	Jidy, W	nui Olli i	ocaliis,	Very Moist	io iviois	) i									
4 SS	7	1 2	3		_									CL							18	
				10	_							.5 (691										
					-						ay, Trace S o Very Moi	and and										
5 SS	15	3 6	16		690		, *******			,		-					1 = -	7.42			14	
55		10		1	_												+.5+	1.42			'*	
				-	-																	
6	18	6 8	17	]	-									CL								
SS	10	9		15	_																17	
				-	_																	
				-	685	C	rav l ean (	Clav T	race Sa	and and	Gravel, wi	17 (68 h Silt	35)									
					_	Le	enses, Ver	ry Mois	st													
		4		-																		
7 SS	16	5 6	11		-												2.75	3.05			22	
				20	-																	
					_									CL								
					680																	
				-	-																	
8		4		1 4	_																	
SS	18	5 7	12	25													3.0	3.30			20	
7   14/4	TES	- FNICO	N 18177		רו ייכיי	10.5				CAVE	E-IN OBS					MD: 5	TIO1:	. ^^	·er			W
					DURIN LETIO		DRILLING NE	: NE	=				VE DEI									W <u>C</u> W
					HOUR		N/A				-		= Not E							Recor	rded	
NOTE: Str	atificat	tion line	es betv	ween s	oil type:	s rep	resent the	approx	ximate b	oundary	gradual tra	nsition	betwee	n in-si	tu soil l	ayers	should	be exp	ected			

PROJECT NAM	ЛE	——Gı	reat V	 Vater	· Allian	nce	GREAT WATE				) <u>C</u>	Into	rtol		ei)			NG N	o CC-B-	-005A
PROJECT No					005217	741	ALLIANCE"	D'	ORIN	G LC	JG	inte	rtek		<u> </u>	PAGE	No			2 of 2
CONSULTANT			Gı		y-Hans		CONSULTANT PROJECT No.			DATE START	ΓED			5/	13/19	HORIZ	ONTAL	DATUM NAD 2	VERTICAL DATU	
ORILLING COI	TRACTO	OR		<u></u>		PSI	DRILLING CONTRACTOR PRO	DJECT No		DATE COMP	PLETED				13/19	LATITU				
CREW CHIEF							DRILLING RIG	LID 4	TV #440	BORING OFF	FSET			3/	13/13	LONGI	ITUDE			
FIELD LOG BY	<i></i>				P. Rota		DRILLING METHOD / HOLE SIZ	ZE	ATV #419	ROADWAY N	NAME					NORTH	HING			
OG QC BY					. Blado		HAMMER TYPE	EFFICIENCY	3¼ HSA	STATION		OF	FFSET	kyan	Road	EASTI	NG			324464
COUNTY				<u>B.</u>	Broba	ack	TOWNSHIP RANG	L E	85% SECTION	<u> </u>	1/4 SECTIO	DN O	1/4 SI	ECTION		SURF/	ACE ELE	EVATION		2534517
	—				——						Ι	1 1								702 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		Soil / Roc and Geolo Each Major U	gical Origi Unit / Con	jin for nments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes	
9 SS	18	4 5 7	12	-	675 	Le	iray Lean Clay, Trace S enses, Very Moist	and and G	iravel, with	Silt				2.75	3.13			21		
				30	670	쩳					CL									
10 SS	18	5 7 7	14	35	665									2.50	2.56			20		
11 SS	18	4 6	13	-	†									2.75	2 81			21		
00		7		40		L Br	oring offset 20' to the So	outh due to		40 (662)				2.75	2.01					
							ret area	oring at 40.												

Alliance 7/12/19					
Great Water					
S		WATER & CA	VE-IN OBSI	ERVATION DATA	
ᅋ	$\bar{\Delta}$	WATER ENCOUNTERED DURING DRILLING: NE	<b>₩</b>	CAVE DEPTH AT COMPLETION: 33ft.	WET [ DRY [
GE	Ā	WATER LEVEL AT COMPLETION: NE	Ē	CAVE DEPTH AFTER 0 HOURS: N/A	WET [ DRY [
δ	Ā	WATER LEVEL AFTER 0 HOURS: N/A		NE = Not Encountered; NMR = No Measurement Recorded	
- 00	NOT	E: Stratification lines between soil types represent the approximate boundary	ary; gradual tran	sition between in-situ soil layers should be expected.	

ROJECT No		Gı	reat V		Alliar		8	SREA.	T WA	TER	BC	PIN	IG L	OG	Int	erte		S	PAGI		1110	No CC-B-0	
ONSULTANT					05217		CONSUL	TANT PRO	DJECT No	)			DATE STA	RTED					HOR	IZONTAL	DATUN	/ VERTICAL DATUM	1 c
RILLING CON	TRACT	OR	Gr	reeley	/-Hans	en				ROJECT I	No		DATE COI				5	/13/19	)	TUDE	Ň/	AD 27 NO	GVI
REW CHIEF						PSI	DRILLING		2.011		-		BORING O				5.	/13/19	)	GITUDE			
	,			ı	P. Rota	aru		METHO	D / 1 IC ! T		HD AT	V #419								THING			
IELD LOG BY				R.	Blade	orn			HULE י ע			31/4 HSA	ROADWA	NAME		0555	Ryan	Road	I			;	324
OG QC BY				B.	Broba	ick	HAMMER		Auto			85%	STATION			OFFSE			EAST				527
OUNTY							TOWNSH	llP	RA	NGE		SECTION		1/4 SECTI	ION	1/	4 SECTION	1	SURF	ACE EL	EVATIO	N	7
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)			an	d Geo	logical	escripti Origin / Comr	for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q. (tsf)	Unconfined Comp. Strength Q. (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes	
						То	psoil F	ill (5.5'	± Thicl	k)					$\otimes$						16		
		2		1 -	-										$\otimes$						10		
1 SS	10	2	4		_										$\otimes$	X					36		
		_												OL	$\bowtie$	8							
					_										$\otimes$							Organic Content = 4.	.5%
2 SS	16	2	5	-	775											8					40		
33		3		_5	_								: (770 5)		$\bowtie$	8					43		
						Bro	own Le	an Cla	y, Trac	e Gray	/ Mottlin	5.5 ig, Trace	(773.5) Sand		- XX	ğ							
3	17	3	7	1 1	_	an	d Grav	el, Mois	st	•													
SS	17	3 4	7	-	-												4.0	4.12			19		
				1 4	_									CL									
		5			770																		
4 SS	17	5 5 5	10														4.5+	7.83			16		
		5		10	_							10 !	5 (768.5)										
					_	Gr	ay Lea	n Clay,	with S	and Le	nses a	nd Seam											
5	6	6 10	20			116	au <del>c</del> od	iiu allü	Giave	i, ivioist	i io we	·											
SS	-	10		†	-																16		
				-	-	Ā																	
6		5			765																		
SS	11	8 9	17	15																	16		
				13	_																		
				-	_																		
					_																		
						<b>15</b>								CL									
					_																		
7 SS	15	3 4	10	-	760																15		
33		6		20	_																15		
					_																		
				-	-	$\nabla$																	
					_																		
		5			755																		
8 SS	4	6 6	12																		22		
		-		25	-										(///	1							
								WA	TER	& CA	AVE-II	N OBS	ERVAT	ION D	ATA							1	_
					DURIN			IG: 2	22ft.			屬		DEPTH					3ft.				V [
					LETIO		13ft. N/A							DEPTH lot Encou						Poss	ded		V
NOTE: Stra					HOUR			he ann	rovimat	e hours	danı: en	adual tran									ueu		

PROJECT NAM	ИE	G	reat V	Nater	Alliar	ıce	A GREAT V	ZΔTF	- D/			20	1	4.1		$\sim$	B	ORI	NG	No	CC-B	-016A
PROJECT №					005217		GREAT V	E"	В	ORIN	G L	JG	Inte	rtek	l₽	S	PAGE	No				2 of 2
CONSULTANT			Gı		v-Hans		CONSULTANT PROJEC	T No			DATE STAF	RTED			5/	13/19		ZONTAL	DATUM <b>NA</b>	D 27	VERTICAL DAT	
DRILLING CON	NTRACT	OR			·	PSI	DRILLING CONTRACTO	R PRC	JECT No		DATE COM	PLETED				13/19	LATI	TUDE				
CREW CHIEF					P. Rota	aru	DRILLING RIG		HD A	TV #419	BORING OF	FSET						SITUDE				
FIELD LOG BY	,			R	. Blado	orn	DRILLING METHOD / H	OLE SI		3¼ HSA	ROADWAY	NAME			Ryan	Road		THING				324193
LOG QC BY					Broba		HAMMER TYPE A	uto	EFFICIENCY	85%	STATION		OI	FSET			EAST	ING				2527043
COUNTY							TOWNSHIP	RANG	Ε	SECTION		1/4 SECTIO	)N	1/4 5	SECTION		SURF	ACE ELI	EVATION			779 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		and G	eolo	k Descript gical Origi Unit / Com	n for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Notes	
				-	_	Tr	ray Lean Clay, wit race Sand and Gra	avel,	Moist to We	et 27.5	5 (751.5)	CL										
							nd of Boring at 27.				n											

Possible Cobbles, Boulders, or Bedrock

Boring offset 6.5' North due to slope and wetland End of Boring at 27.5 ft.

/ater Alliance 7/12/19				
Great Water				
СН	WATER & CAVE-IN C	DBSE	ERVATION DATA	
OTE		R	CAVE DEPTH AT COMPLETION: 18ft.	WET   DRY
GE	▼ WATER LEVEL AT COMPLETION: 13ft.	1	CAVE DEPTH AFTER 0 HOURS: N/A	WET   DRY
GW	▼ WATER LEVEL AFTER 0 HOURS: N/A		NE = Not Encountered; NMR = No Measurement Recorded	
- 00	NOTE: Stratification lines between soil types represent the approximate boundary; gradua	al trans	sition between in-situ soil layers should be expected.	

PROJECT NAM		Gı	reat V		Alliand	ALLI	AT WATER	BORIN	IG L	OG	Inte	ertek		Si	PAGE	UKI No	ING I	No CC-B-01
ONSULTANT	•				052174	CONSULTANT P	ROJECT No		DATE STAF	RTED			F 1	22/40	HORI	ZONTAL	DATUM	VERTICAL DATUM
RILLING COI	NTRACT	OR	Gr	reeley	/-Hanse	DRILLING CONT	TRACTOR PROJECT	No	DATE COM	PLETED				23/19	LATIT	UDE	NAD	D 27   NGVE
CREW CHIEF					P:	DRILLING RIG		LID APPLANT	BORING O	FFSET			5/:	23/19	LONG	SITUDE		
TELD LOG BY	Y				P. Rotar	DRILLING METH	HOD / HOLE SIZE	HD ATV #419	ROADWAY	NAME			<b>.</b>	D	NORT	HING		**
OG QC BY					V. Jone	HAMMER TYPE	A r - 4 a	31/4" HSA	STATION			OFFSET	xyan	Road	EAST	ING		324
COUNTY				В.	Brobac	TOWNSHIP	Auto RANGE	85% SECTION		1/4 SECTION	DN NC	1/4 S	ECTION		SURF	ACE ELI	EVATION	2526
										Τ		Τ	£	£				78
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	a Ead	•	escription al Origin for / Comments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q. (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
						Topsoil (11"±	Thick)	0.	9 (779.1)	OL	7/ 1/	-					30	
1		2		1 1	- [	Brown Mottled Trace Sand an	Gray Lean Cla	ay with Silt Lenson  Moist to Moist	es,									
SS	6	3 7	10	-	-								4.0				19	
				1 4	_					CL								
		11		+	_					CL								
2 SS	9	15 17	32		775								4.5+	10.31			15	
					775				5 (774.5)									
		7			- [	Brown Lean Cl	lay, Trace San	d and Gravel, M	oist									
3 SS	5	7 9 15	24		_								4.5+	10.31			15	
-		15		-													-	
				]	-					CL								
4	8	11 13	27	-	-													
SS	-	14		10	770			4-	F (700 F)				4.5+	7.42			17	
					-	Brownish Gray	to Gray Lean	Clay, Trace Sar	5 (769.5) d and									
5	0	5 8	16		-	Gravel, with Fi	ne Sand Sean	ns, Very Moist										
SS	8	8	٥١	_	-								4.0	4.33			17	
				-	-													
6		3			_													
6 SS	8	6 8	14	15	765								3.0	3.30			17	
		-		15	_ / 65													
				-	-													
					_													
										CL								
					-													
7 SS	10	4	11	-	-								3.5				18	
00		7		20	760								3.5				10	
					_													
				-	-													
				-	-													
8		6	10	1 4	_													
SS	11	5 7	12	25	755								2.5	2.56			21	
					_							1						
<u> </u>	ATEP	ENCO	I INITE	EBED	DI IDIKI	W 3 DRILLING:	/ATER & C	AVE-IN OBS 」 <u>認</u>		ION DA		JWDIE	TION:	30	ft			W
					LETION		INE			DEPTH								W D
▼ WA	ATER	LEVE	_ AFT	ER 0 I	HOURS:	N/A		· · ·	NE = N	ot Encou	ntered;	; NMR =	No M	easure	ment		ded	
NOTE: Str	atifica	tion line	es betv	ween s	oil types	represent the ap	proximate bour	ndary; gradual tra	nsition bet	ween in-s	itu soil	layers	should	be exp	ected			

PROJECT NAME	Gr	eat V	/ater	Allian	се	GREAT V	VATEI	R D			20	leste		(F)	H	В	ORI	NG	No	CC-B-	017A
PROJECT No			0	05217	41	ALLIANO	E-	D	ORIN	G L	JG	inte	rtek	ľ۲	51	PAGE	No				2 of 2
CONSULTANT		Gr		/-Hans		CONSULTANT PROJEC	T No			DATE STAR	TED			5/:	23/19	HORIZ	ZONTAL	DATUM <b>NA</b> I	D 27	VERTICAL DATU	
DRILLING CONTRAC	CTOR				PSI	DRILLING CONTRACTO	OR PROJE	ECT No		DATE COM	PLETED				23/19	LATIT	UDE				
CREW CHIEF			F	P. Rota		DRILLING RIG		HD A	TV #419	BORING OF	FSET					LONG	SITUDE				
FIELD LOG BY				V. Jon		DRILLING METHOD / H	OLE SIZE		1/4" HSA	ROADWAY	NAME			Rvan	Road	NORT	HING				324164
LOG QC BY				Broba		HAMMER TYPE	uto	FFICIENCY	85%	STATION		OF	FSET	.,		EAST	ING				2526391
COUNTY			<u> </u>	Dioba	OK	TOWNSHIP	RANGE		SECTION		1/4 SECTIO	)N	1/4 S	ECTION		SURF.	ACE ELE	VATION			780 ft
Sample No / Type Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		and G Each M	Geologi ajor U	Descriptical Originit / Com	n for iments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Notes	700 11
9 SS 12	4 5 8	13	30	- - - <b>750</b>	Gr	ownish Gray to Gravel, with Fine S	ray Lea	an Clay, I	race Sand y Moist	dand	CL			3.0	2.39			19			
SS 6	8 11	19	35	745		End	of Bori	ng at 35.0		35 (745)				3.0	2.89			20			

End of Boring at 35.0 ft.

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당	WATER & CAVE-IN (	OBSE	RVATION DATA										
₽ Z w	VATER ENCOUNTERED DURING DRILLING: NE	鬣	CAVE DEPTH AT COMPLETION: 30ft.	WET DRY									
₽ 🛣 w	VATER LEVEL AT COMPLETION: NE	<b>=</b>	CAVE DEPTH AFTER 0 HOURS: N/A	WET   DRY									
§ <u>▼</u> w	VATER LEVEL AFTER 0 HOURS: N/A		NE = Not Encountered; NMR = No Measurement Recorded										
g NOTE: S	NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.												

PROJECT NAM		Gr	eat V		Allian		<b>S</b> €	REAT	WAT	TER	BO	RIN	G L	OG	Inte	ertel		S	PAGE		ING I	NO C	C-B-02
CONSULTANT				0	05217		CONSULTA	NT PRO	IECT No.				DATE STAF								_ DATUM	VERT	1 c
RILLING CON		OP.	Gr	eeley	/-Hans	en	RILLING				h		DATE COM				5/	22/19		TUDE	NAD	27	NGVE
REW CHIEF	mwcl	JI			P	SI	RILLING		JIOK Ph	VOUEO I N	•		BORING O				5/	22/19		SITUDE			
	,			F	P. Rota	ru			/ LIOI E /		HD AT\	/ #419								THING			
IELD LOG BY	r 			R.	Blado	rn	RILLING		/ HOLE :			4 HSA	ROADWAY	NAME			Ryan	Road					324
OG QC BY				В.	Broba	ck	HAMMER 1		Auto			85%	STATION			OFFSET			EAST				2522
COUNTY						I	OWNSHIP	,	RAN	NGE	S	ECTION		1/4 SECTI	ON	1/4	SECTION		SURF	ACE EL	EVATION		79
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)			and Each	Geol Major	ogical	scriptio Origin t Comm	for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>o</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Notes
						Тор	soil (10	)"± Thi	ck)			0.8	3 (789.2)	OL	311/	,					43		
1		5		-	- [	Bro	wn Mot	tled Gr	ay Lea	an Clay	with Cl	ay Sand	l								40		
ss	18	6 7	13	-	-	000		in Ora	701, 70	ny more				CL							17		
													3 (787)										
						Bro Len	wn Lea ses, Tr	n Clay, ace Sa	Trace	e Gray d Grav	Mottling el, Mois	, with S t	ilt										
2 SS	18	8 11	27		-																16		
		16		_5	785																.		
					_									CL									
3	18	8 11	25																				
SS	.5	14		†	-												4.5	6.80			16		
					-	Bro	wn I 🗪	n Clav	Trace	e Sand	, with G	ravel M	8 (782) oist										
_		8			_	ں ہے	···· LCd	.ı Oıay,	, iiau	Janu	, with G	iavoi, IVI											
4 SS	12	12 17	29		700												4.5	5.98			13		
		••		10	780									CL									
					_									CL									
5 SS	0	11 11	27		_																15		
		16											13 (777)								13		
				+	-	Gra	y Lean	Clay, 7	Ггасе	Sand a	nd Grav		13 (777) Silt										
6	10	6	27		_	Len	ses, M	oist to '	Very N	/loist													
SS	18	11 16	27	15	775												4.5	5.15			16		
					_																		
					-																		
					-																		
					_																		
7 SS	15	4 5	11		-									CL			25	2.47			18		
		6		20	770												2.5						
					_																		
					-																		
					-																		
		2			_																		
8 SS	18	3 6	9	25	765												1.5	1.73			22		
				25	100										////	1							
										& CA	VE-IN		ERVAT										
					DURIN			9: N	E					DEPTH									W D W
					LETION HOURS		NE N/A					<u> </u>		DEPTH ot Encou						Recor	ded		W D
								e appro	ximate	e bound	lary; grad	dual tran	sition bet										

PROJECT NO  CONSULTANT  DRILLING CONTI  CREW CHEF  FIELD LOG BY  COUNTY  COUNTY  ON  ON  ON  ON  ON  ON  ON  ON  ON  O		DR	Gr		05217 -Hans		CONSULTANT PROJECT		BORIN	DATE STA				P		PAGE	. 140				0 -5 0
DRILLING CONTI		DR .	Gr	eeley		sen	CONCOLIMITATION	J1 140			RTED					HORI	ΖΟΝΤΔΙ	DATLIM	\/F	ERTICAL DATU	2 of 3
CREW CHIEF FIELD LOG BY LOG QC BY COUNTY						- 1	DRILLING CONTRACTO	OR PROJECT N	Jn .	DATE COI				5/2	22/19	LATIT	UDF	DATUM <b>NA</b>	D 27	N N	IGVD 29
FIELD LOG BY LOG QC BY COUNTY	(c					PSI	DRILLING RIG			BORING (				5/:	22/19		SITUDE				
LOG QC BY	(L				P. Rota		DRILLING METHOD / H		HD ATV #419	ROADWA	/ NAME					NORT					
	c				Blade		HAMMER TYPE	EFFICII	31/4 HSA ENCY	STATION		O	FFSET	Ryan	Road	EAST	ING				324030
Sample No / Type	c c			В.	Broba	ack	TOWNSHIP	RANGE	85% SECTION		1/4 SECTION	ON	1/4 5	ECTION		SURF	ACE ELI	EVATION	l .		2522371
Sample No / Type	<b>∂</b>													£	£						790 ft
	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		and G Each M		Origin for Comments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Notes	
9 SS	118	4 4 5 5	9	30	- - - - 760	Le	ray Lean Clay, Transes, Moist to Ve	ace Sand a ery Moist	ind Gravel, with	Silt				1.75	1.73			25			
10 SS	18	4 5 6	11	35	- <b>755</b> -									1.5	1.73			24			
11 SS	18	4 4 5	9	40	- - 750 -						CL			1.5	1.98			30			
12 SS	18	4 6 6	12	45	- - 745									1.5	2.06			22			
13 SS	12	4 6 5	11	50	-	<b>2</b>	\A/AT!		VE-IN OBS	ED\/A	ION D	ATA		2.0	1.98			21			
□ WAT	ER E	ENCO	UNTE	RED	DURIN	NG D	ORILLING: NE			_	DEPTH		MPLE	TION:	48	ft.					WET
_					LETIO		NE NE				DEPTH										WET DRY
▼ WAT	ER L	LEVEL	_ AFTI	ER 0 H	HOUR	S:	N/A				Not Encou							ded			
NOTE: Strat	tificati	ion line	es betv	veen so	oil type	s repi	resent the approxi	mate bound	lary; gradual tra	nsition be	ween in-s	itu soil l	ayers	should	be exp	ected					

PROJECT NAM	ΛE	Gı	eat V	Vater	Alliar	nce	GREAT V	VATEI	R D	ORIN		) <u>C</u>	late	ertek	_	di	/ I		NG	No	CC-B-021A
PROJECT No				0	05217	741	ALLIANC	E-	D	JKIN	G L	JG	IIILE	rtek	ľ۲	SI	PAGE				3 of 3
CONSULTANT			Gr	reelev	/-Hans	sen	CONSULTANT PROJEC	T No			DATE STAR	ΓED			5/:	22/19	HORI	ZONTAL	DATUM <b>NA</b>	AD 27	VERTICAL DATUM NGVD 29
DRILLING CON	NTRACT	OR				PSI	DRILLING CONTRACTO	OR PROJE	ECT No		DATE COMP	LETED			5/	22/19	LATIT				
CREW CHIEF					P. Rota		DRILLING RIG		HD V	TV #419	BORING OF	SET			<u> </u>			SITUDE			
FIELD LOG BY	,				Blade		DRILLING METHOD / H	IOLE SIZE		31/4 HSA	ROADWAY I	AME			Ovan	Road		HING			324030
LOG QC BY							HAMMER TYPE		FFICIENCY		STATION		C	FFSET	Nyaii	Noau	EAST	ING			
COUNTY				В.	Broba	ICK	TOWNSHIP	uto RANGE		85% SECTION		1/4 SECTIC	DN N	1/4 S	ECTION		SURF	ACE ELI	EVATION	N	2522371
				1											_	_					790 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		and G Each M	Geologi ajor U	: Descript ical Origi nit / Com	n for nments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Notes
14 SS	0	6 6 5	11	55	- - - - 735	Le	ray Lean Clay, Tra enses, Moist to Ve	ery Mois	st	·	Silt 55 (735)	CL			2.0	1.24			21		

Boring offset 7' to the East due to tree End of Boring at 55.0 ft.

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CH	WATER & CAVE-IN (	DBSE	RVATION DATA									
OTE		屬	CAVE DEPTH AT COMPLETION: 48ft.	WET  DRY								
GE	▼ WATER LEVEL AT COMPLETION: NE	=	CAVE DEPTH AFTER 0 HOURS: N/A	WET  DRY								
Š	▼ WATER LEVEL AFTER 0 HOURS: N/A		NE = Not Encountered; NMR = No Measurement Recorded									
- 00	NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.											

PROJECT No		Gı	reat V		Allian	ALLIA	NCE"	BORIN	IG L	OG	Inte	ertek		Si	PAGE		ING	No CC-B-05
CONSULTANT					05217	CONSULTANT PRO	JECT No		DATE STAF	TED					HORI	ZONTAL	. DATUN	1 (
RILLING CON		OR	Gr	reeley	/-Hans	en	CTOR PROJECT No		DATE COM					08/19	LATIT		N/	AD 27 NGVI
REW CHIEF					F	DRILLING RIG			BORING OF				5/	08/19		SITUDE		
IELD LOG BY	/				T. Eb			V ATV #420	ROADWAY							HING		
					D. Eb	ert		3½ HSA		ı v⊃ıvI⊏	1.		ham	Drive				337
OG QC BY				В.	Broba		Auto EFFICIEN	81%	STATION			FFSET	=0=:		EAST			2509
COUNTY						TOWNSHIP	RANGE	SECTION		1/4 SECTION	UN	1/4 S	ECTION		SURF	ACE ELI	EVATIO	N 75
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	and Each	oil / Rock Dese d Geological C Major Unit / C	Origin for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
					705	Topsoil Fill (9"±	Thick)	3.0	3 (795.2)	OL	7/1/2						22	
		4		1 1	795	Fill, Brown and E	Black Sandy Lea										22	
1 SS	7	6 5	11		_	Moist				CL			2.0				19	
		J							3 (793)									
					-	Buried Topsoil, [	Dark Gray Silt,	Trace Organic	. ,									
2 SS	16	5 10	23	-	-					OL	<u> </u>							
55	-	13		_5	_												14	Organic Content = 4.5%
					790	Brown Lean Clay	, with Grav Mo		5 (790.5)	1	/////							
3		4		-	/30	Seams/Lenses,	Very Moist	9										
3 SS	10	5 5	10	-	-					CL			2.0	1.65			17	
		-			_	✓			8 (788)									
						Brown Silty Fine to Wet	Sand, with Gra	Mottling, Ve	ry Moist									
4 SS	12	3 4	8	-	-					SM							000	
33		4		10	_				(705.5)								22	
					785	Brown Lean Clay	, with Fine San		ist	1								
5		7		1 1	_ ]	ĺ		•										
ss	17	7 9	16	-	-					CL			4.0	2.80			26	
					_	0	. 'II- C''' !		13 (783)									
		2				Gray Lean Clay,	with Silt Lenses	s, very Moist										
6 SS	18	3 4	8		-								2.0	2.47			24	
- =		4		<u>15</u>	-								0					
					780													
				-	-					CL								
				-	-					OL.								
7		3			_													
7 SS	16	4 5	9	20	,	7							2.0	3.13			23	
		-		20	-	Ā												
				-	775													
									22 (774)									
						Gray Silt, Wet												
					-					K #1								
8	18	3	6		_					ML								
SS	10	4 2		25		<b>3</b> 1											25	
					_			<del></del>			1							
<u> </u>	TED	ENICO	1 INITE	-DED	אוטוי.		TER & CAV					יויייי ב	TION	. 25	ft			v
_					DURIN LETIO		Bft.		-	DEPTH DEPTH								
					HOURS				-	ot Encou						Recor	ded	
						represent the appr	oximate boundar	ry; gradual tran	sition bety	veen in-s	itu soil	layers	should	be exp	ected			

PROJECT No		G	reat V	Vater	Allian	ice	B	GREA	T WA	TER	B	ORIN	IG L	OG		Inte	rtek		Si	PAGE		NG	No	CC-	B-0	50A
CONSULTANT					05217			TANT PRO					DATE ST									DATUN	4 T	VERTICAL I		of 2
DRILLING CO		OR	Gı	reeley	/-Hans			G CONTRA			· No			MPLETED				5/	08/19		TUDE	N/	AD 27		NG	VD 29
CREW CHIEF						PSI	DRILLIN						BORING					5/	08/19		GITUDE					
FIELD LOG B					T. Eb	ert		G METHO	D / HOLE		ASV A	ATV #420	ROADWA								THING					
LOG QC BY					D. Eb		HAMMER	R TYPE		EFFIC	CIENCY	3¼ HSA	STATION			OF	Dur FSET	ham	Drive	EAST	ΓING	_				37840
COUNTY				В.	Broba	ıck	TOWNSI	HP	Auto	NGE		81% SECTION	,	1/4 SECT	ΓΙΟΝ		1/4 S	ECTION		SURF	ACE EL	EVATIO	N			09497
															Т			ے	ے							796 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		011	an Each	d Geo	ock De logica r Unit	l Orig	otion in for nments		USCS / AASHTO		Graphic	Well Diagram	Unconfined Comp. Strength $Q_p$ (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Not	es	
9 SS	16	2 3 4	7	30	770 _ _ _ _ _ _ 765	Gr	ay Silt,	Wet						ML								21	P <sub>10</sub> = 10 P <sub>60</sub> = 10 P <sub>200</sub> = 9	00% 00% 8.9%		
10 SS	15	3 3 4	7		_	Gr	ay Lea	n Clay,	With \$	Silt Sea	ams, \	Very Moist	32 (764)					1.5	1.4			19				
11 SS	18	4 3	7	_	<b>760</b> 									CL				1 25	1.07			20				
12 SS	16	4 4 5	9		<b>755</b> 														1.40			21				
<u> </u>		5		45				F	nd of I	Boring	at 45	O ft	45 (751)					0								
Great Water Alliance 7712/19																										
								WA	TER	& C/	AVE-	-IN OBS		ΓΙΟΝ [	)A	ΤA										
					DURIN			IG: 8	Bft.			Æ	_	DEPTH												WET
\ <del></del>					LETION		20ft.							DEPTH							Dos-	dod				WET   DRY
NOTE: St					HOURS		N/A resent t	he anni	oximat	e boun	idarv: d	gradual tra		Not Enco								uea				
0[012.30	· aunua		יים מיים		on types	·υμι	Journ	uppi	Janial	J Journ	.au.y, (	<sub>5</sub> . aaaaa ii a		.,,0011111	Jill	. con le	., u u	iouiu	20 GV	٠٠٠٠٠						

PROJECT NAM	ИE	Gı	reat V		Allian	ALLIANCE" DUKI	NG L	.OG	Inte	ertek		S	PAGE	OR ENo	ING	No CC-B-050
CONSULTANT					05217	CONSULTANT PROJECT No	DATE ST	ARTED					HORI	IZONTAL	DATUM	1 of
ORILLING CON	VTRACT	OR	Gı	reeley	/-Hans	DRILLING CONTRACTOR PROJECT No	DATE CO	MPLETED				09/19	LATI	TUDE	N/A	AD 27 NGVD
CREW CHIEF						DRILLING RIG	BORING	OFFSET			5/	09/19		GITUDE		
TELD LOG BY	<u> </u>				T. Eb	DRILLING METHOD / HOLE SIZE	ROADWA	Y NAME					NOR'	THING		
OG QC BY					D. Eb	HAMMER TYPE EFFICIENCY	STATION		Ic	Dur	ham	Drive	EAST	ΓING		3375
COUNTY				В.	Broba	ck         Auto         85°           TOWNSHIP         RANGE         SECTION		1/4 SECTION	ON	1/4 S	ECTION		SURF	ACE EL	EVATION	25096
1					T											793
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>o</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
						Topsoil Fill (12"± Thick)	1 (701 00)	OL	711						24	
		8		1 1	-	Fill, Brown and Gray Lean Clay with Sand a	1 (791.99) nd	'	1/2.1.1						24	
1 SS	18	5 4	9		_	Gravel, Very Moist		CL							13	
					790		3 (790)		$\otimes$							
						Brown Lean Clay, with Gray Mottling, Trace Gravel, Very Moist	Sand and									
2 SS	10	2	8		-	•		CL			45	4.04			15	
		5		_5	-	,	5.5 (787.5)				7.5	7.07				
					_	Brown Silty Clay, with Fine Sand Lenses, V										
3	0	10 13	26													
SS		13		†	-											
					785			CL-ML								
4		7			_											
SS	17	9 12	21	10							2.5	4.12			14	
					_		.5 (782.5)									
		4		-	-	Gray Lean Clay, with Silt Lenses, Very Mois	į									
5 SS	18	6 7	13		_						3.0	3.38			21	
		'			780											
					_											
6 SS	17	4 4	9	-	-						2.25	2.64			24	
33		5		15	_						2.25	2.04			24	
				-	-											
				-	775			CL								
7	40	2	_		_											
SS	18	3 4	7	20							2.0	3.54			24	
				-	-											
					-											
					_											
					770											
				1	_											
8 SS	18	1	7		-						20	2.39			23	
00		4		25	_						2.0	2.39			23	
						WATER & CAVE-IN OB	SERVA	TION D	ATA							
<u> </u>	TER	ENCC	UNTE	ERED	DURIN	IG DRILLING: NE		DEPTH		MPLE	TION	: 40	ft.			WE DR
					LETION	-		DEPTH								WE DR
▼   WA	TER				HOURS	S: N/A s represent the approximate boundary; gradual tr		Not Encou							ded	

PROJECT NAME  Great Water Alliance	GREAT WATER BORIN	IG LOG	Intertel	neil		CC-B-050B
PROJECT No <b>00521741</b>			interter	, (bail	PAGE No	2 of 2
CONSULTANT Greeley-Hansen		DATE STARTED		5/09/19	HORIZONTAL DATUM NAD 2	7 VERTICAL DATUM NGVD 29
DRILLING CONTRACTOR PSI		DATE COMPLETED		5/09/19	LATITUDE	
CREW CHIEF T. Ebert		BORING OFFSET			LONGITUDE	
FIELD LOG BY  D. Ebert		ROADWAY NAME		urham Drive	NORTHING	337550
LOG QC BY <b>B. Broback</b>	HAMMER TYPE Auto EFFICIENCY 85%	STATION	OFFSET		EASTING	2509624
COUNTY	TOWNSHIP RANGE SECTION	1/4 SECTIO	ON 1/4	4 SECTION	SURFACE ELEVATION	793 ft
Sample No / Type Sample Recovery (in) Blow Counts N - Value Depth (ft) Elevation (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Graphic Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf) Unconfined Comp. Strength Q <sub>c</sub> (tsf)	Liquid Limit (%) Plasticity Index (%) Moisture Content (%)	Notes
9 18 2 8 — 765 SS 18 4 8 30 — 760	Gray Lean Clay, with Silt Lenses, Very Moist	CL		1.0 1.81	25	
10 SS 18 4 8 35 - 35 - 755				1.5 2.56	20	
11 SS 18 4 9 40 181	End of Boring at 40.0 ft.	40 (753)		1.25 2.56	31	

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WATER & CAVE-IN C	DBSERVATION DATA

O	Witter a city of the		TO THE TOTAL PROPERTY OF THE P	
8		屬	CAVE DEPTH AT COMPLETION: 40ft.	WET  DRY
GE	▼ WATER LEVEL AT COMPLETION: NE	1	CAVE DEPTH AFTER 0 HOURS: N/A	WET  DRY
8	▼ WATER LEVEL AFTER 0 HOURS: N/A		NE = Not Encountered; NMR = No Measurement Recorded	
9	NOTE: Stratification lines between soil types represent the approximate boundary; gradu	al trans	sition between in-situ soil layers should be expected.	

PROJECT No		Gı	reat V		Alliano 05217	ALLI	AT WATER	BORIN	IG L	OG	Inte	ertek		S	PAGE		UVU	No CC-B-050
CONSULTANT			C.			CONSULTANT PR	ROJECT No		DATE STAF	TED			E	08/19	HORI	ZONTAL	DATUM	D 27 VERTICAL DATUM NGVE
RILLING CO	NTRACT	OR	Gi	eerey	-Hanse	DRILLING CONTI	RACTOR PROJECT I	No	DATE COM	PLETED					LATIT	TUDE	INAI	D ZI   NGVL
REW CHIEF					P. Rota	DRILLING RIG		UD ATV #440	BORING OF	FSET			5/	08/19	LONG	SITUDE		
IELD LOG B	Y					DRILLING METH		HD ATV #419	ROADWAY	NAME				D	NORT	THING		0.40
OG QC BY					Blado	HAMMER TYPE	EFFIC	3½ HSA	STATION		C	Moor OFFSET	iana	Road	EAST	ING		340
COUNTY				В.	Broba	TOWNSHIP	Auto RANGE	85% SECTION		1/4 SECTION	ON	1/4 S	ECTION		SURF	ACE EL	EVATION	2506
													£	£				81
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	ar Eac	Soil / Rock De nd Geological th Major Unit /	Origin for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
						Topsoil Fill (10			8 (811.2)	OL	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						24	
1		5		1 †	-	Fill, Brown Lea	n Clay with Cru	ushed Concrete	, Moist									
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				1	-	Possible Fill P	roun Loos Ols	v Tropa Caral	3 (809)	1	$\longrightarrow$							
		4				Possible Fill, B Gravel, with Sil	t Lenses, Mois	y, made Sand a t	ai IU									
2 SS	15	5 5	10										3.0				20	
		-		5	-													
		3			-													
3 SS	4	3	6		805					CL			1.25				17	
		J																
				†	-													
4 SS	3	3 5	11		-								3.0				18	
		6		10	-			10	5 (801.5)				0.0					
					_	Brown Lean Cla Sand and Grav						1						
5 SS	13	5 7	14		800	Janu and Grav	GI, IVIUISL			CL			o	200				
აა		7		†					12 /700\				2./5	3.38			17	
			L	]	-  -	Brown Lean Cla	ay, Trace Sand	d and Gravel, V	13 (799) ery Moist									
6	15	4 6	14	]	-													
SS	ıυ	8	14	15						CL			2.75	2.64			15	
				†	-													
					795_	Gray Lean Clay	, Trace Sand a	and Gravel, Moi	17 (795) st	1								
					_	_		, -										
7		6																
7 SS	18	6 9	15	20									3.0	3.54			14	
				20	-													
					-					CL								
					_ 790													
				†	- L <u>e</u>	<u>a</u>												
8 SS	17	10 6	14		-								3.0	3.38			27	
		8		25	-								3.0	0.30			21	
			<u> </u>			W	ATER & CA	AVE-IN OBS	ERVAT	ION D	ATA	<u> </u>				<u> </u>		
_						G DRILLING:	27ft.	<u>₩</u>	CAVE	DEPTH	AT CC				.5ft.			W D
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PROJECT NAM	ΛE	Gr	eat V	Vater	Allian	ıce	GREAT V	NATE	ER D			20	lasta	ant alla		H	В	ORI	NG	No	CC-B-0	)56A	
PROJECT No					05217		GREAT V	E"	D	ORIN	IG L	JG	inte	rtek	۱ř	51	PAGE	E No				2 of 2	
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FIELD LOG BY	′				P. Rota		DRILLING METHOD / H	OLE SI	ZE		ROADWAY	NAME			اء ۔۔ ۔ ا	DI	NOR	THING				240000	
LOG QC BY					Blado		HAMMER TYPE		EFFICIENCY	31/4 HSA	STATION		0	Moor FFSET	iand	Road	EAST	ING				340233	
COUNTY				В.	Broba	ICK	TOWNSHIP	RANG	Ε	85% SECTION		1/4 SECTIO	ON	1/4 S	ECTION		SURF	ACE ELI	EVATION	٧	2	506740	
	I														<u>-</u>	_						812 ft	
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)		and G Each M	Seolo ajor (	ck Descrip gical Origi Unit / Com	n for nments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Notes		
				-	_ 785	$\nabla$	ray Lean Clay, Tra				et 27 (785)	CL											
9 SS	18	4 7 9	16	- - 30	-	Gi	ay Silly Fille Sall	u, vve	et										27				
					_ 780 _							SM											
10 SS	18	4 6 7	13	35	_		F1	of D-	oring at 35.0		35 (777)								27				
l							⊏na	OI DO	nny at 33.t	υ IL.													

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Teat W.	
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ਲੂ WATER & CAVE-IN OBSERVATION DATA	
□ WATER ENCOUNTERED DURING DRILLING: 27ft.   💆 CAVE DEPTH AT COMPLETION: 23.5ft.	WET □ DRY □
Ü Ţ WATER LEVEL AT COMPLETION: 18ft. □ CAVE DEPTH AFTER 0 HOURS: N/A	WET DRY
₹ WATER LEVEL AFTER 0 HOURS: N/A NE = Not Encountered; NMR = No Measurement Recorded	I
NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.	

PROJECT NAI		Gı	reat V		Allian	ALL	AT WATE	<sup>R</sup> B	ORIN	G LO	OG	Inte	ertek		Si	PAGE		NG No	
CONSULTANT				0	05217	CONSULTANT	PROJECT No			DATE STAR						HORI	ZONTAL	. DATUM	VERTICAL DATUM
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IELD LOG B	ī				D. Eb	ert	HOD / HOLE SIZI		31/4 HSA	ROADWAY	waiviE			rland	Road		HING		340
OG QC BY				В.	Broba		Auto	FFICIENCY	85%	STATION			FFSET			EAST			2506
OUNTY						TOWNSHIP	RANGE		SECTION		1/4 SECTION	ON	1/4 \$	SECTION		SURF	ACE ELI	EVATION	82
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Ea	Soil / Rock and Geolog ch Major U	ical Orig	in for		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q <sub>p</sub> (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
					200	Topsoil (6"± 7  ¬	hick)		0.51	(820.49)/	OL	<u>111</u>							
1 SS	18	4 6 9	15	_	820 -	Brown Sandy Lenses, Moist		Frace Gr		ilt	CL			4.5	5.56			15	
2 SS	18	7 10 13	23	5	_	Brown Lean C Lenses, Moist		Sand and	Gravel, wit	3 (818) h Silt	CL			4.5	5.15			15	
					_	Drown Lasa C	You with C	ovich De-		(815.5)									
		7			815	Brown Lean C Sand and Gra	vel, with Gravel, with Silt	ayısıı Bro y Lenses	s, Moist	, rrace									
3 SS	18	13 16	29	_	-						CL			4.5	8.24			14	
4 SS	18	5 8 12	20	10	-									4.5	5.15			17	
				10	_			0		(810.5)									
		6		-	810	▼Gray Lean Cla Silt Lenses, V	ay, Trace to ery Moist	with San	d and Grav	ei, with									
5 SS	18	7 9	16	-	-									2.25	3.22			17	
6 SS	17	4 6 7	13	<u>15</u>	-						CL			2.5	3.30			15	
					805														
					,	$\nabla$				17 (804)									
					-	Gray Medium	to Fine San	d, Wet		(554)		<i>γ////</i>							
					-														
7		1			_														
7 SS	3	1 3	4	20							SP							21	
				===	_	=													
					800														
					_					22 (799)		////							
						Gray Lean Cla Moist	ay, with Inter	bedded (	Silt Seams,	very									
				†	-						CL								
8 SS	18	6	14		-									1.5	2.23			20	
		8		25	-										0				
						V	VATER &	CAVE	-IN OBSI	ERVATI	ON D	ATA	<u> </u>	1	ı		1	1 1	
						IG DRILLING:	17ft.		<u>≅</u>	CAVE [									V C
					LETION HOURS					CAVE [							Doo-	dod	W
						represent the a	nnrovimato h	Uninqaa.	aradual tran	NE = No								u <del>c</del> u	

PROJECT NAME  Great Water Alliance  PROJECT No					nce	GREAT WATER BORING				NG LOG Intertek PSI						BORING No CC-B-057B										
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		OD.	Gı	eeley	/-Hans	sen					T NI=							5	/09/19	9		DATUM <b>NA</b>	D 27	VERTICAL	NGV	/D 29
DRILLING COI	NIRACIO	UK			l	PSI		G CONTR	KACTOR	PROJEC	I NO				IPLETED			5	5/09/19	9	TUDE					
CREW CHIEF					T. Eb	ert	DRILLIN				HD A	ATV #41	9	ORING O							GITUDE					
FIELD LOG BY	<i>-</i>				D. Eb	ert		G METHC	DD / HOL			31/4 HS	Α	OADWAY	NAME			orland	Road	i	THING				34	0761
LOG QC BY				В.	Broba	ack	HAMMEI		Aut	ю	ICIENCY	85°	%	TATION			OFFSE				TING				250	6502
COUNTY							TOWNS	HIP	R	ANGE		SECTION	N		1/4 SECTION	ON	. 1	4 SECTIC	N .	SUR	FACE EL	EVATION	N		8	321 ft
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)			an	nd Ged	Rock D ologica or Unit	al Orio	ption gin for mments			USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength	Unconfined Comp. Strength Q. (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)		Not	tes	
				-	795 	Mo Gr	ay Med		) Coars			Silt Seam	27	(794)	CL											
9 SS	18	15 17 18	35	30	_ 790 _										SP							8				
10 SS	18	9 8 15	23	35	- - 785								37	(784)								16				
11 SS	17	6 8 10	18	40	- - - 780	Gı	ay Fin	e Sand	I, Wet						SP							21				
12 SS		6 15 20	35	45	_			E	End of	Boring	g at 45	5.0 ft.	45	(776)								16				
									_ 01		,0															
									ATEF	₹ & C	AVE	-IN OB														
V WA					DURIN			NG:	17ft.						DEPTH					Oft.						WET DRY WET D
					LETIO		11ft. N/A								DEPTH					/A	Door	rdod				WET   DRY
					HOUR			the ann	rOxima	ite hou	ndan/	gradual tr			lot Encou							ueu				
NOTE: Str	uunodl		יים הכון	100113	on type	ο ισμ	JJUII	ωιο αμμ	, ONITIO	DOUI	. iuai y,	gradual li	ai iSil	וטוו טכנ	· • • • • • • • • • • • • • • • • • • •	itu oUll	aye	J JI IUUI	a ne e)	WCOLE!	<b>.</b> .					

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CONSULTANT			Gr	eeley		CONSULTANT PROJECT No	DATE STAF	TED			5/	08/19	HORI	IZONTAL	DATUM	
RILLING CON	TRACTO	DR				DRILLING CONTRACTOR PROJECT No	DATE COM					08/19	LATI	TUDE		
REW CHIEF				F	. Rota		BORING O						LONG	GITUDE		
IELD LOG BY				R.	Blade		ROADWAY	NAME			rland	Road		THING		3458
OG QC BY				В.	Broba		STATION			FFSET	SECTION		EAST			25050
COUNTY				ı		TOWNSHIP RANGE SECTION		1/4 SECTION	ON T	1/4 \$	_	_	SURF	-ACE EL	EVATIOI	84:
Sample No / Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments		USCS / AASHTO	Graphic	Well Diagram	Unconfined Comp. Strength Q, (tsf)	Unconfined Comp. Strength Q, (tsf)	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Notes
						Fill, Brown Silty Sand and Gravel, with Aspha 1.01	lt, Moist (843.99)	SM							8	
1 SS	12	4 4 5	9		-	Fill, Brown and Black Lean Clay with Sand an Gravel, Moist	d	CL			3.75				13	
	_ [	_			-	Buried Topsoil, Black Lean Clay, Moist	3 (842)		<u> </u>							
2 SS	10	3 4 4	8	5	- 840		. (000 5)	OL	1/ 1/1, 1/1/						31	Organic Content = 8.1%
					-	5.9 Gray Lean Clay, with Brown Mottling, Very Mo	5 (839.5) oist									
3 SS	10	4 3 4	7		-		0 (007)	CL			1.0	1.15			32	
				+	-	Gray Sandy Lean Clay with Sand Seams, with	8 (837) Gravel,									
4 SS	5	2 3 6	9	10	- 835	Very Moist	5 (834.5)	CL							17	
					-	Gray Lean Clay, Trace Sand and Gravel, with Sand Lenses, Very Moist to Moist										
5 SS	17	3 3 3	6		-	Sand Lenses, very Moist to Moist					2.0	1.24			16	
6	45	4	40		-											
SS	15	5 5	10	15	<b>830</b> -	<u>Ma</u>		CL			3.0	3.30			17	
7 SS	10	3 5 4	9	20	- - - <b>825</b>	End of Boring at 20.0 ft.	20 (825)				2.75	2.47			16	

WATER & CAVE-IN C	DBSERVATION DATA

. 1					
	$\bar{\Delta}$	WATER ENCOUNTERED DURING DRILLING: NE	屬	CAVE DEPTH AT COMPLETION: 14.5ft.	WET DRY
5	$ar{m{\Lambda}}$	WATER LEVEL AT COMPLETION: 12ft.	■	CAVE DEPTH AFTER 0 HOURS: N/A	WET   DRY
5	Ţ	WATER LEVEL AFTER 0 HOURS: N/A		NE = Not Encountered; NMR = No Measurement Recorded	

### WAUKESHA WATER UTILITY WAUKESHA, WISCONSIN

### Great Water Alliance Contract Package 6 Return Flow Pipeline, 18-Inch Sanitary Sewer, and Outfall Facilities

Addendum No. 2, Attachment No. 1

### Greeley and Hansen LLC

### 1) GENERAL

a) The Pre-Bid Conference for the above referenced project was held online at 1:30 PM on April 14, 2020. This attachment summarizes verbal comments from the Pre-Bid Conference.

### 2) INTRODUCTIONS

a) Waukesha Water Utility is the Owner and was represented at the meeting by Dan Duchniak, General Manager, and Chris Walter, Technical Services Manager. Greeley and Hansen is the Program Manager and was represented at the meeting by Katie Richardson, Ryan Christopher, and Ted Bluver. Black & Veatch is the Construction Manager and was represented by Jim Cobb, Jeff Champion, and Matt Hayes.

### 3) OPENING REMARKS

- a) The Pre-Bid Conference is mandatory for those General Contractors bidding on the referenced project. Roll call was completed and a list of General Contractors in attendance is provided in Addendum No. 2.
- b) Bid Documents are available through QuestCDN, Project # 6923865.
- c) The Plan Holders List as of April 17, 2020, will be sent to all Plan Holders with Addendum No. 2.

### 4) Contract Documents

- a) Key Contract Documents for the Bidder were reviewed and included the following Specification Sections:
  - i) 00 11 13 Notice to Bidders
  - ii) 00 21 13 Instructions to Bidders
  - iii) 00 41 00 Bid Form
  - iv) 00 45 49 Use of American Iron and Steel Requirement Tax Exemption
  - v) 00 52 00 Agreement
  - vi) 00 72 00 General Conditions
  - vii) 00 73 00 Supplementary Conditions
  - viii) 00 73 39 DBE and Local Business Participation
  - ix) 00 82 30 Non-Segregated Facilities

- x) 00 82 40 Nondiscrimination in Employment
- xi) 00 82 50 Disadvantaged Business Enterprise (DBE) Participation

### 5) Overview of Work

- a) A brief project description was provided. Key project elements include approximately 11.27 miles of 30-inch ductile iron pipeline that includes open-cut construction, horizontal directional drilling, and jack and bore installation, and all valves, assemblies, and appurtenances for a complete installation. The project also includes the outfall facilities at the Root River and an 18-inch sanitary sewer in the City of Franklin.
- b) The Contractors were advised to review Specification Section 01 11 00 for project constraints.
- c) The easement information, geotechnical reports, environmental sampling, and other pertinent information is available as appendices to the specifications.

### 6) SPECIAL REQUIREMENTS

- a) The project will receive funding through the Wisconsin Department of Natural Resources and applicable requirements apply.
- f) Tax Exemption: Refer to Specification Section 00 21 13.
- g) Bonds and Insurance: Refer to the specifications.

### 7) GENERAL DISCUSSION/ CONTRACTOR'S QUESTIONS

1. Question: Does the Contractor have to bid Contract Package 5 to be able to bid the alternate in Contract Package 6?

Answer: No. Bidding the Contract Package 6 base bid and the alternate option and not Contract Package 5 is allowed.

2. Question: Will Contract Package 6 alternate option for a combined Contract Package 5 and 6 combined bid undermine a potential low bidder on Contract Package 5 if Contract Package 5 bids are open prior to Contract Package 6?

Answer: Contract Package 5, Addendum No. 3 has been issued to address your question.

3. Question: Please state the two addresses for unrecorded easements?

Answer: The addresses for the two easements that are yet to be recorded are in Specification Section 01 11 00 Summary of Work, Paragraph 1.6.D and are as follows: 10925 W. Ryan Road and 5733 W. Oakwood Road in the City of Franklin.

4. Question: Can the road be closed for construction on 60th Street in the City of Franklin.

Answer: Yes, portions of 60th Street can be closed as shown in the maintenance of traffic drawings. There is a City of Franklin Fire Station along 60th Street as well as the Franklin Industrial Park that needs access at all times.

5. Question: Note 1 on Drawing C122 states that if asphalt is disturbed then restore road to median. Is the asphalt restoration covered in the asphalt bid item or is it incidental?

Answer: The asphalt restoration being referenced by Note 1 on Drawing C122 is incidental. Contract Package 6, Addendum No. 2 addresses your question.

6. Question: Specification Section 00 82 50: MBE percentage is 8%, but DBE percentage is 10%, which percentage is correct?

Answer: The correct percentage is 10% for DBE requirements. The fair share percentages of 8% for MBEs and 8% for WBEs from Specification Section 00 82 50 are federal requirements. Per 40 CFR 33, the fair share objectives are not quotas.

7. Question: The design for the 18" sanitary sewer in the City of Franklin is too close to the overhead power lines to install safely and does not have borings to adequate depths. Would Greeley and Hansen consider redesigned the sanitary sewer alignment?

Answer: The Base Bid shall be as shown in the contract documents. The contractor has the ability to propose an alternative per Specification Section 00 41 00, Page 00 41 00-34, Bid Alternative No. 2.

8. Question: Will the Contract Package 6 alternate option for a combined Contract Package 5 and 6 bid put stress on local businesses who may not be able to financially afford to bid Contract Package 6 bid alternate?

Answer: Contract Package 5, Addendum No. 3 has been issued to address your question.

DISCLAIMER: The notes presented herein are intended to be explanatory in nature and do not supersede requirements presented in the contract documents. Only changes made by addendum to the contract documents will be binding.

Attachments: PowerPoint Presentation from Pre-bid Conference



# Contract Package 6 Return Flow Pipeline, 18-Inch Sanitary Sewer, and Outfall Facilities

MANDATORY PRE-BID CONFERENCE APRIL 14, 2020



# Agenda

- I. Introductions and Team Organization
- II. Opening Remarks
- III. Contract Documents
- IV. Overview of Work
- V. General Discussion/Contractor Questions
- VI. Closing Remarks



# I. Introductions and Team Organization

- Lines will be muted during presentation
- Please use the "Raise Hand" function during Q&A and your line will be unmuted



### Slide 3

CRV1 Need the raise hand icon shown instead as lines will be automatically muted as they come in and we will be controlling it.

Richardson, Catharine, 4/13/2020

**CRV2** need to think about how this will work during roll call

Richardson, Catharine, 4/13/2020



# II. Opening Remarks

- Comments from WWU General Manager, Dan Duchniak
- Pre-bid Conference Sign-in Sheet and Roll Call
- Availability of Contract Documents
- Bidders are required to be prequalified
- General and first-tier subcontractors prequalified are listed in the Great Water Alliance website (<a href="http://greatwateralliance.com/contractors/">http://greatwateralliance.com/contractors/</a>)



# III. Contract Documents



### Section 00 11 13 Notice to Bidders

- Bids will be received electronically via (www.QuestCDN.com)
- May 14, 2020 at 10:00 AM
- Contract Package 5 and Contract Package 6 Alternate Bid



### Section 00 21 13 Instructions to Bidders

- Prequalification Requirements
- Interpretation and Addenda
  - Questions in writing via email to gwa@greeley-hansen.com
  - Last day for questions is ten (10) days before the bid opening date
  - Answers and interpretation to questions will be issued through QuestCDN seven (7) days before the bid opening date
- Bid Security
- Preparation of Bid



### Section 00 21 13 Instructions to Bidders

- Submittal of Bid
- Withdrawal of Bids
- Bid Opening
- Tax Exemption
- Wisconsin Department of Natural Resources (WDNR) Loan Program related Procurement requirements
- Bidder's Checklist



### III. Contract Documents

- Section 00 41 00 Bid Form
- Non-Discrimination in Employment
- Federal Lobbying Restrictions
- Alcohol and Drug free Workplace
- Davis Bacon Act Wage Rules
- Alternate to Base Bid
- Subcontracted Work Form
- Section 00 45 49 Use of American Iron and Steel Requirement Tax Exemption



# Section 00 52 00 Agreement

- General
- Contract Times
- Complete pipe installation within the Sunset Bank Easement 35 consecutive days
- Substantial Completion 660 consecutive days
- Final Completion 720 consecutive days
- Liquidated Damages
  - \$3,700 per day after the time specified for Substantial Completion
  - \$3,500 per day after the time specified for completion and readiness for final payment
  - \$4,000 per day after August 31, 2023



### III. Contract Documents

- Section 00 72 00 General Conditions
- Section 00 73 00 Supplementary Conditions
- Section 00 73 39 DBE and Local Business Participation
  - DBE requirements 10%
  - Local business requirement 30%
- Section 00 82 30 Non-Segregated Facilities
- Section 00 82 40 Nondiscrimination in Employment



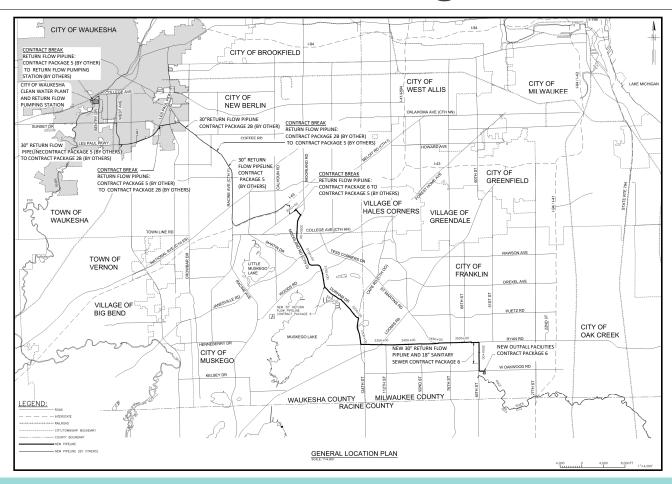
# Section 00 82 50 DBE Participation

- Funding Agencies Rules
  - Environmental Protection Agency (EPA) Water Infrastructure Finance and Innovation Act (WIFIA) program
  - WDNR Clean Water Funding Program (CWFP)
- Pre-contract Award Obligations
- Evaluation of DBE Utilization and Good Faith Efforts

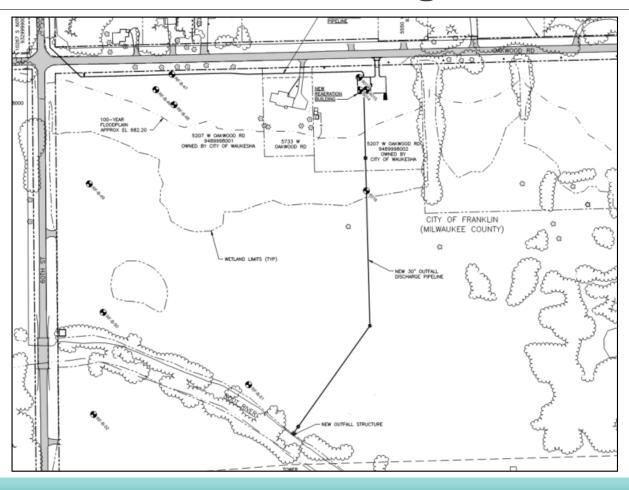


# IV. Overview of Work

# Overview of Contract Package 6



# Overview of Contract Package 6





### IV. Overview of Work

- Section 01 11 00 Summary of Work
- Project Constraints
- Suggested Work Sequence
- Permits
  - Local
  - State
  - Federal



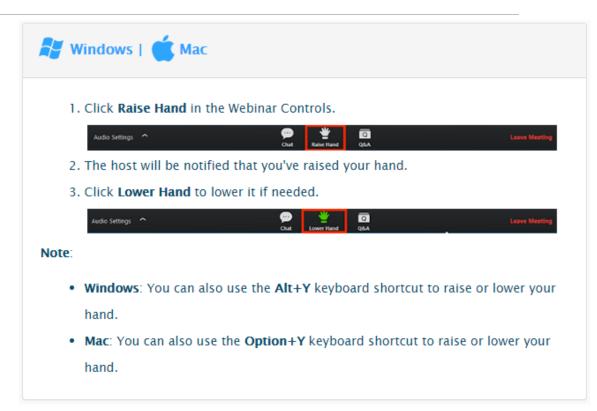
### IV. Overview of Work

- Easements
- Maintain Access to Properties
- Geotechnical Report
- Road Crossings
- Wetlands, Floodplains, Floodways
- Leakage Testing



# V. General Discussion/Contractor Questions

Raise hand to ask a question.





# VI. Closing Remarks

• A written report of the meeting minutes from today's meeting, including attendance sheets, will be provided as part of an addendum.

